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EDITORIAL.

IT has long since ceased to be thought strange that the way people will take sides in a question depends very greatly upon the influence its settlement may have upon their personal interests, but we have such a case in point that we are tempted to mention it.

On page 256 of our last volume may be found a news item from which we quote as follows :

"Professor Bouchardat of Paris, in his capacity as member of the Council of Hygiene and Salubrity, recently submitted a report to the prefect of police, in which he pointed out that in a specimen of ham said to be imported from Cincinnati, the ham was enveloped in a cloth saturated in a yellow substance. This yellow substance proved to be composed of the chromate of lead, a most deadly poison. It was suggested in the report that particles of this substance may become detached and be mixed up with the alimentary substances vended by grocers and others, and thus run the risk of poisoning those who make use of them. By a decree from the police the substances so enveloped were seized and buried under ground, and future supplies are to be treated in a similar manner."

It may be noted here that there was no attempt to show that a trace of the poison could be found in the ham itself, and no mention was made of the fact that between the painted cloth bag and the ham were interposed a number of folds of thick paper which completely protected the meat from possible contamination. It was the bare possibility that the yellow paint *might* get into other articles for consumption which led to such summary proceeding. Compared with the *possible* harm to the ham-eating Frenchmen, the *actual* loss to the American dealer was hardly worthy of consideration.

Now, let us turn to page 172 of this number. It may be said here that French peas have long been noted for certain qualities which have rendered them quite as much desired by some persons as Cincinnati hams have been by others, and the most important of these has been the bright green color which they retain even after being cooked, and which renders their appearance on the table so attractive. That this vividness of color depends upon the presence of a salt of copper has long been commonly known ; but it was not until prosecutions in British courts, of infringements of the laws prohibiting the adulteration of articles offered for sale as food, threatened to injure the French industry of adding sulphate of copper to peas, that our Gallic friends have given the subject any serious attention. In this instance the question is not whether there may *possibly* be contam-

ination with a poison. The presence of poison is not only admitted, but *recommended;* and we are given to understand that the man is better served who gets a quarter of a grain of blue vitriol with his peas than one who is obliged to take them *au naturel.*

The American Medical Association, in its action upon the Pharmacopœia question, is quite likely to justify its reputation for fogyism, the truth being that about everything in the way of professional reform and advancement has its origin outside of that body, and is carried through to fulfilment by the efforts of others. In some cases this has been done in spite of the Association, which, instead of co-operation, has offered only hinderances. A good illustration of this is the way in which the question of the admission of women to the profession was handled. The fact that the Association at its meeting in Chicago tabled the proposition of Dr. Squibb, is no argument whatever that the revision of the Pharmacopœia which he proposes, or even his plan for accomplishing it, is not desirable, since it is the habit of the Association to do so with about every question that really deserves attention or may involve an exercise of authority.

As the matter stands at present, there is little likelihood that the revision of 1880 will be undertaken in any other than the customary way; but there is quite as little doubt that the character of the work done and the methods adopted to meet the requirements of the two professions interested, will have to be very different from that of the last revision, or the Pharmacopœia issued by the "National Convention" will cease to be looked upon as an authority and another will take its place by common consent.

A number of Brooklyn physicians and pharmacists have connected their offices by means of a telegraph. What special advantage is to accrue to them from such an arrangement we have yet to learn, unless it is true, as has been stated, that it is for the purpose of enabling them to influence business in each other's favor. Dr. A., being engaged, can secure the attendance of some one "on the line" in an urgent case, or a person applying at a drug-store for the address of a physician can be told which one of the "ring doctors" is at home. It is said that the arrangement had its origin in a chess club, and was undertaken to enable the members to keep track of the game without being absent from their places of business. This, we presume, will be the chief use to which the line will be put, and those who see in it an attempt to exercise an unfair control of the business of prescribing and dispensing medicines will find their fears ungrounded.

Our correspondent at Chicago writes us that "The preparation men from Philadelphia and New York came in such an eager swarm that it looked as if the Association had met for their benefit only, and so it was decided not to permit any exhibition or distribution of any kind to be made in the building. But, at the eleventh hour, concession was made in favor of medical publications, in the vestibule. Wm. Wood & Co., and Appleton, of New York, and Lea, and Lippincott, of Philadelphia, having men here, had permission to show their goods in that part of the hall. I found on visiting ——'s, that they proposed occupying the whole space to the exclusion of all the rest, and through some influence succeeded in putting a stop to their greedy arrangements, and got a place arranged for each."

It has for a number of years been customary, in such meetings of British societies, to have an "annual museum" where there might be exhibited things of interest to the members present. We would suggest that in future it would be not only well, but an exceedingly valuable part of the arrangements for such meetings as those of our State and National Associations, if a committee of each association should be appointed to make arrangements for such an exhibit and solicit the coöperation of the publishers, instrument-makers, manufacturing pharmacists, and others who would, without doubt, be quite prepared to bear the actual expense of such exhibit. An evening could be given with profit to attendance upon such a display as would be made, and in connection with the trial and explanation of new instruments and apparatuses, it would form one of the most attractive features of the meeting.

Our correspondent says further, that "Mr. Fortum, of McKesson & Robbins's establishment had a fine display, especially prepared for the occasion, and succeeded in renting a room in the building to show it in."

We are able to present on page 178, the first of a series of articles on the apparatus for manufacturing and dispensing carbonated beverages, which embraces an amount of practical information never before, to our knowledge, collected into such shape. We trust that these papers will be of far greater value to the trade than the usual formulas for "soda-water syrups," which seem to comprise about all the information that most pharmaceutical journals have been able to

offer their readers in connection with this important feature of their business.

We omitted to state, in our announcement of a prize for the best analysis of adulterated drugs, to be furnished by us, at what time the receipt of papers would be closed. For this reason we are not able to come to a decision in time for this number. We will continue to receive the answers to the first series of analysis until the 25th instant, and will declare the result in the July number. We are now prepared to forward a second series of samples to such as desire to compete for the August prize. Answers to this second series must reach us before the 20th of July, and, like the first, must be signed with some fictitious name,or a device, and be accompanied by a sealed envelope containing the real name and address of the contestant, and having the chosen device or cognomen upon the outside.

The first sample was pharmacopœial and contained a common adulterant. Both the pure and adulterated materials are much used in the arts, and are sold by nearly all druggists.

The second sample will be an article on the materia medica list, and contains, also, adulterations to be determined by the contestant.

We believe we are warranted in stating that the College of Pharmacy of the City of New York will shortly offer to its members, and to such other pharmaceutists as may desire to avail themselves thereof, the facilities for verifying and adjusting their measures, balances, and weights, which we suggested in our May number.

We believe that pharmaceutists, as a rule, have shown their willingness to impose upon themselves all the reasonable checks and safeguards which an honest and conscientious administration of their affairs demands; appreciating that success in their business depends mainly upon a reputation for honesty and exactness. The fact that inaccurate weights and measures are extensively supplied to the market is hardly to be charged to them, we think, and we believe that the possession of such instruments by some of them has arisen chiefly from inadvertence and the difficulty which has existed of subjecting such weights and measures to critical examination. The unanimity with which pharmaceutists in this neighborhood will avail themselves of this opportunity will, we believe, prove that their inclination to do what is right requires no legislative stimulus.

Just as we are about going to press, we have news of the destruction by earthquake and eruption of the sea in Peru, of over four hundred thousand quintals (44,800,000 lbs.) of nitre, with almost entire ruin of the works. It is reported that the damage done will be almost irreparable. The shipping of guano from the southern deposits will also be indennitely suspended, as all the facilities in the way of launches, shutes, wharfs, buildings, water-condensers, etc., have been swept away.

MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

The Active Principles of Calabar Bean.

There is scarcely another modern drug which has been subjected to such frequent and exhaustive investigations as the seeds of *Physostigma venenosum;* but at the same time there is a surprising difference of views and theories in regard to its physiological action. All authors are agreed on *one* property of the drug, namely, that of contracting the pupil, but in all other respects they differ widely. Ever since Fraser's classical investigations (1863) it has been customary to regard the Calabar bean as a poison directly paralyzing the spinal cord, and from this view arose its employment as a remedy in tetanus, where it was found (by Watson and others) to be so exceedingly effective that most other previously used remedies were henceforth discarded. But lately statements have been published, in reference to the action of the commercial extract of calabar and of "physostigmin," which would make their usefulness in tetanus appear exceedingly problematical. Rossbach and Nothnagel, for instance, assert that extract of calabar is not a paralyzing but a tetanizing poison, and the latter adds that it resembled strychnia in so far as its paralyzing effect was a secondary symptom depending upon an exhaustion of nerves and muscles by preceding violent convulsions. Martin Damourette thought he had solved the problem by supposing that the drug excited the spinal marrow and paralyzed the peripheral nerves. But such compromises, unsupported by evidence, are inadmissible in exact science, and Rossbach was unable to obtain any paralyzing effects upon the peripheral nerves with Merck's physostigmin. It was left to chemistry to throw light upon these apparent discrepancies. Hitherto it had been supposed that calabar contained only *one* alkaloid, namely, physostigmia, as Hesse called it, or eserina, as Vé and Leven termed it. But, according to the researches of Harnack and Witkowsky, conducted in the pharmacological laboratory at Strassburg, Calabar bean contains *two* alkaloids, one of which entirely resembles strychnia in its effects, while the other produces the previously known central paralysis. The new alkaloid, named by the discoverers *calabarin* (calabaria), differs from physostigmia by its insolubility in ether, and easier solubility in water; it is also soluble in alcohol. A further difference is the fact that the precipitate produced by potassium iodohydrargyrate in calabarin solutions is insoluble in alcohol. The commercial preparations of calabar are, according to the same authorities, mixtures of the two alkaloids in varying proportions, and therefore produce such discordant effects. Whenever physostigmia preponderates, it appears to suppress the

effects of calabarin; this fact explains why most investigators merely took notice of the paralyzing effects. On the other hand, there are preparations in the market which scarcely contain any physostigmia at all, as was proved directly by Harnack and Witkowsky in the case of an English specimen. The purest commercial preparation was Duquesnel's eserine, which appears to be absolutely free from calabarin.

Since, therefore, commercial preparations of calabar may contain comparatively large percentages of calabarin, the administration of which is positively injurious and highly dangerous in tetanus, it is desirable to possess a means of control, or to employ preparations which make the presence of the dangerous alkaloid impossible. As the latter is absolutely insoluble in ether, it appears advisable to introduce, in place of the present officinal alcoholic extract of calabar, an ethereal extract, although the same drawback, which Hager points out as inhering to the officinal preparation, is not unlikely to attach to this, namely, a proneness to speedy deterioration. Indeed, physostigmia is very readily decomposed, with formation of Duquesnel's rubeserin, which appears to be formed not only under the influence of alkalies, but even spontaneously, as may be suspected from the change of color observable in old Calabar beans. Duquesnel's eserin has an especial tendency towards this decomposition, according to Harnack and Witkowsky. But rubeserin cannot contaminate the ethereal extract prepared from the beans, since it is insoluble in ether. (*Pharm. Zeit.*, 1877, Nos. 16, 30.)

In No. 21 of the same serial we find a communication by O. Hesse, commenting on the above article, in which he states that he has succeeded in extracting from Calabar beans a substance crystallizing from alcohol in probably the same form as the so-called crystallized eserine, and appearing to be a much more definite and stable substance than the latter. It crystallizes from ether, chloroform, and petroleum-ether in white silky needles, melts at 133–134° C., is indifferent, and greatly resembles cholesterin and iso-cholesterin in appearance, though not in properties or composition. Hesse also adds that the substitution of an ethereal instead of an alcoholic extract would be of but little use, as Calabar beans contain physostigmia in such a combination that it appears insoluble in and incapable of extraction by pure ether.

The well-known manufacturing chemist, E. Merck, in Darmstadt, has heretofore prepared and sold a substance which was supposed to be the only active principle of calabar, and which he called calabarin, but which was really eserine or physostigmin. He now accepts and confirms the results of Harnack's and Witkowsky's researches, and has put both of the active principles upon the market labelled with their correct names, namely, "*physostigmin*" (or eserin, being the same substance which he formerly sold as calabarin), and "*calabarin*," distinguished by the addition of Harnack's name ("Harnack's calabarin"). *The attention of physicians and pharmacists is particularly directed to this change of appellations.*

An Adulteration of Aconite Root.

MR. E. M. HOLMES has a paper on this subject in the *Pharmaceutical Journal and Transactions*, from which we abstract the following:

Aconite root possesses such powerful properties that it is very important that the medicinal article should, as far as possible, be of uniform strength and quality. Yet this is by no means the case, for it is difficult to find in a commercial sample one root in a dozen which, upon fracture, appears sound and in good condition. This is due, according to Hanbury, to its being gathered indiscriminately by peasants, who regard neither the most advantageous time for collection nor the proper species. This is not to be wondered at, considering that the wholesale price is as low as 6d. per pound. As the root is sold by the German

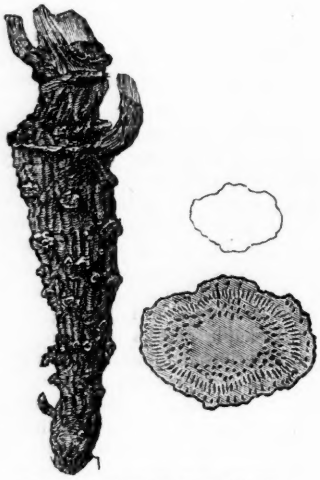


FIG. 1. *Imperatoria Ostruthium* L.

peasants to buyers who obtain a profit by supplying wholesale dealers in Germany, and these again have to obtain a profit before its exportation, it is obvious that the price paid the peasants must be too small to pay for careful collection.

In some districts aconite root is said to be gathered by intelligent herb and root collectors, who are well acquainted with the plants they gather; but what is collected by them is probably retained for home consumption, and the inferior samples exported.

From the cheapness of the root, and from the fact that few roots have the distinctly conical appearance of aconite, it is evident that it would scarcely pay to adulterate it. Adulteration, then, must either result from careless collection, or from accidental admixture.

The root which has lately been found mixed with aconite is that of Masterwort, *Imperatoria*

Ostruthium L., an umbelliferous plant, officinal in the Edinburgh Pharmacopœia so late as 1792. It is a native of mountainous countries, and grows in similar districts to those in which aconite is found. As it is still officinal in the German Pharmacopœia, its accidental occurrence in aconite root from Germany is not surprising. Its value in this country [Great Britain] is double that of aconite root, and it is obvious, therefore, that it has not been purposely used as an adulteration.

In the sample examined the Masterwort root amounted to about 5 per cent.

The characters by which it may be distinguished from aconite root are as follows: The root-stock (Fig. 1), for it is properly so called, is less tapering than aconite root; is slightly compressed, and exhibits several warty zones indicating periods of growth. In some specimens these are much less prominent than in others, but can always be traced. The whole of the root-stock is finely wrinkled transversely, so as to give it a somewhat annulated appearance. The transverse section

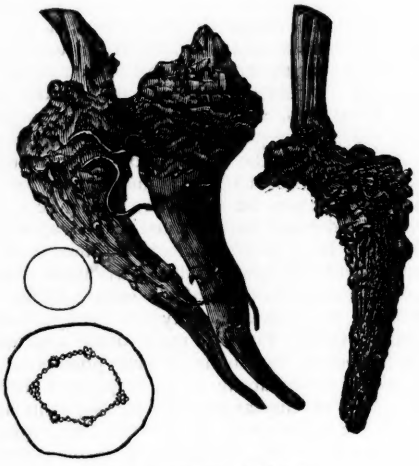


FIG. 2. *Aconitum Napellus* L.

presents very marked characters. The central portion is of a yellowish-white color, and exhibits a more or less complete ring of brownish dots. The portion next the bark presents elongated dots of a paler color, which give this portion of the section a radiate appearance. With the aid of a lens these dots are seen to be filled with an oily or resinous substance. The cortical portion is very thin. The root-stock has an odor comparable to bruised ivy leaves, or to the plant commonly known as cow parsley (*Chærophyllum sylvestre* L.), and a pungent and slightly bitter taste.

Aconite root is very variable in appearance internally; frequently the centre is quite hollow. Some pieces have a brownish color, others are white and starchy, and a few present a resinous fracture. In a sound root, however, which is usually starchy or slightly resinous, a faint line may generally be traced, which marks out the medullium. This line has usually five to nine prominent angles (see Fig. 2), the number of angles being larger as the section approaches the top of the root. If the root be wetted and examined with a lens, the line is seen to consist of an irregular line of vessels, which form small bundles in the apices of the projecting angles. The cortical portion occupies nearly half the circumference of the root.

From the above characters it will be observed that the presence of oil receptacles in the Masterwort root at once distinguishes it from aconite. A spirituous tincture of masterwort when dropped into water gives a blue fluorescence resembling that of quinine, and a slight milkiness, and communicates to the water its peculiar odor. By these characters its presence might probably be detected in a mixture containing tincture of aconite.

Removal of Strong Odors from the Hands and from Utensils.

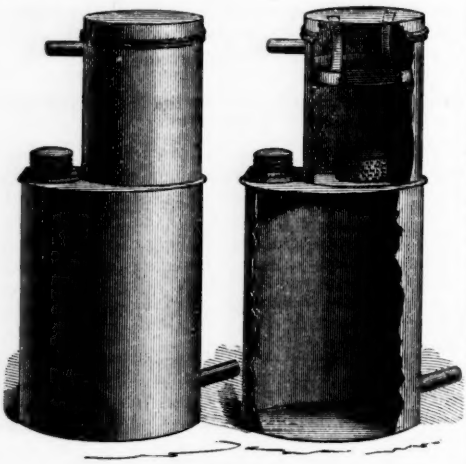
THE *Schweizerische Wochenschrift für Pharmacie* (1877, 84) has a communication from F. Schneider, in which he states that ground mustard, mixed with a little water, is an excellent agent for cleansing the hands after handling disagreeably or strongly odorous substances, such as cod-liver oil, musk, valerianic acid and its salts. Scale-pans and vessels may also be readily freed from odor by the same method.

In a succeeding number of the same journal (p. 104), A. Huber states that all oily seeds, when powdered, answer for this purpose. Flaxseed meal, for instance, removes odors as well as mustard. The use of ground almond-cake as a detergent is well known. The explanation of this action is somewhat doubtful, but it is not improbable that the odorous bodies are dissolved by the fatty oil of the seed, and emulsionized by the contact with water. In the case of bitter almonds and mustard, the development of ethereal oil, under the influence of water, may perhaps be an additional help to destroy foreign odors. The author also mentions that the smell of carbolic acid may be removed by rubbing the hands with damp flaxseed meal, and that cod-liver oil bottles may be cleansed with a little hot sesame or olive oil.

Therapeutic Value of Zinc Phosphide.

M. PIERRE VIGIER remarks that much attention has lately been given to phosphide of zinc on account of its value as a stimulant and tonic, and the results of experiments and clinical investigations have been recorded in numerous memoirs. Lecorché believes he has demonstrated that it is absorbed in the form of hydrogen phosphide, but Mialhe is of opinion that the decomposition takes place, not in the intestine, but after its absorption into the blood. MM. Vigier and Dr. Curie have shown that zinc phosphide is a much more certain preparation than phosphoretted oil. The former strongly recommends the zinc phosphide in nervous affections, with excessive excretion of the

phosphates and defective nutrition of the brain in spinal irritation, hysteria, and in various forms of paralysis. He observes that it is in use in Ireland as an effective remedy in scrophulosis, and that in England it has been recommended in neuralgia, in paralysis agitans, in sciatica, in collapse, in typhus, and as a tonic in chronic diseases of the nervous system. As a tonic it may be given in doses of ¼ grain per diem, and as a stimulant in somewhat larger quantities for a few days. When thus given it improves the appetite, accelerates the pulse, excites the nerves, and augments the urinary secretion. If the sexual functions are excited the dose has been too large.—*The Practitioner.*



An Improved Water-Filter.

DR. ALEXANDER HADDEN, of New York, has for more than a year had a water-filter of his invention in operation, which is so simple and effective that it is worthy of notice. It is calculated to be used with water supplied in pipes under some pressure, and the filtration is upward. The apparatus from which the adjoining illustration has been made, was the work of an ordinarily intelligent tinsmith, and cost, as nearly as can be remembered, about $1.00. Clear gravel is to be introduced into the lower portion (which holds about a gallon), through an opening in the top, which is afterwards closed by a screw-cap such as is used for kerosene oil cans. The supply-pipe near the bottom is kept clear from gravel by means of a perforated grating. Resting on top of the lower can is a smaller one, holding about a quart, and another perforated grating is securely soldered into the opening between them. On this diaphragm charcoal in small pieces is packed until it reaches a wire ring two-thirds of the way up, and then a removable diaphragm, perforated like the one below, is laid into the ring and serves to keep the charcoal in place. The cover of the smaller can is held in place by a sort of bayonet-catch, similar to the arrangement on some fruit-jars, and has attached to its under surface three projections which are united to a ring of tin, as shown in the illustration, and serve to prevent the upper diaphragm being displaced by the upward current. Near the top of the small can is a spout which gives exit to the water.

The supply-pipe near the bottom of the filter is of a size which admits of its being slipped into one end of a piece of elastic rubber-tubing, while the other extremity of the tubing is attached, in the same manner, to an ordinary water-tap.

When the Croton water was so impure last year, this apparatus proved so effectual that the Doctor's family were supplied with clear and tasteless water, not only for culinary purposes, but in sufficient quantities for laundry and other household work. There is nothing about the apparatus which an ordinary tinsmith cannot make with the materials he commonly has at hand, and with ordinary care it will last for years.

Deductions from Three Hundred and NineteenO b servations of the Action of Chrysarobin—A New Emetic Purge.

CHRYSAROBIN is the name which J. Ashburton Thompson has chosen to designate what is commonly known as Goa powder. After explaining the reasons for the choice of this name and giving Professor Attfield's analysis of the powder (see NEW REMEDIES, vol. v., p. 135), he goes on to say: "The large proportion of chrysophanic acid which enters into the constitution of chrysarobin (80 to 84 per cent.) gives some reason for believing that it may be the active principle. The crude powder and the extracted acid have, indeed, the same local irritant effects. Either, kept in contact with the skin, produces irritation, inflammation, and dislocation of the cutis. Either, introduced in minute quantity into the eye, causes conjunctivitis. Further, some other vegetables which contain chrysophanic acid possess active properties which are in some respects similar to those both of chrysarobin and chrysophanic acid. Thus, the common dock contains chrysophanic acid, and the common dock, made into a poultice, or used as an infusion, is well known to be in common use by the country people for the cure of some cutaneous disorders—the same purpose for which Sir James Fayrer introduced chrysarobin to the notice of the profession in 1874. Senna has purgative properties, and without asserting that this power is owing to the chrysophanic acid which senna contains, it may be stated that purgation is one of the properties of chrysophanic acid taken internally. The same may be said of rhubarb, and more too; for rhubarb is a cholagogue, and I believe I have ascertained that chrysophanic acid is a purgative of decidedly cholagogue powers.

. . . . . .

Chrysophanic acid occurs as a granular powder of fine bright orange color. It possesses neither odor nor taste. It may be crystallized. The resin, as appears from Professor Attfield's analysis, is of two kinds. I used a combination of these two; they form a body of a deep reddish brown

color, brittle and shining. The aqueous extract is black. The crude chrysarobin presented the usual appearances, which are well known. These constituents were offered as perfectly isolated from each other.

First Series of Observations.—All that could be proved of chrysarobin was that it would be slightly purgative, for such is the action ascribed by Schroff to chrysophanic acid. All that was known of it was its powerful irritant property shown by its action on the skin and on the conjunctiva. It seemed possible that it might prove an irritant poison. I soon ascertained, by a series of personal experiments, that it possesses no power, in moderate doses, so active as this. On reaching a dose of six grains, I experienced, at the fourth hour, sensations of nausea, accompanied and followed by sensations of disturbance in the bowels—even an abortive attempt at vomiting; then relief from all symptoms; sixteen hours afterwards a loose action of the bowels. The next higher dose was given to my brother, a student of medicine. He dined at seven; at half-past eight he took eight grains of chrysarobin made into a pill with confection of roses; at half-past ten he vomited; he then slept, but at twelve o'clock was roused by another attack of vomiting. The bowels remained unaffected. There was no depression except during the act of vomiting.

Second Series of Observations.—This includes ninety cases—thirty children and sixty adults.

The action of chrysarobin is emetic and purgative. Vomiting is always the first sign of action. This is not attended by any depression at all comparable with that caused by tartar-emetic or ipecacuanha. In the doses presently to be named it has not caused any distressing retching; and in children, as well as in adults, the acts of vomiting varied between none in three out of the whole number, and six, in two out of the whole number. They were usually two or three; very often only one. The action on the bowels was much more variable, from none in a few cases to nine or ten in equally few cases; most often the range was between three and seven. There is no griping pain, but the nausea continues more or less markedly until the bowels recover. The motions are very watery, and of such a brown color as to suggest its origin with the powder taken. If the vomiting be very early, then the purgation, although marked by a fluid stool or stools, will certainly not be violent; and in some cases in which there was no vomiting, the bowels acted very freely. It does not always happen so, however, under the same condition, and I conclude, therefore, that some persons can take a larger dose than others. I cannot distinguish these persons any more than I can accurately gauge the amount of any other purgative which a given person will require at first seeing him. If the dose be taken into a full stomach, that delays its action and determines it to the bowels.

With regard to the dose of chrysarobin, from thirty of these observations which were made on children, I draw the following conclusions: A dose of six grains produces scarcely any effect upon children of twelve, eleven, ten, or nine years. Upon children of eight and six years, the effect is uncertain. Upon children of from five years down to five weeks it is certain to operate; but the time which elapses before its action is manifested may vary between ten minutes and nine, or even twelve hours. The effect of the same quantity is not increased as the age of the child is diminished. (Thus, three children of five weeks, of three years, and of six years respectively were affected by the six-grain dose to precisely the same extent.) I am not able to say upon what this peculiarity depends, but the intervention of sleep delays the manifestation of *any* effect, and was the cause of delay in the two cases in which alone so long intervals as nine and twelve hours elapsed.

For adults, I choose a dose of twenty grains. From sixty observations, I make the following deductions. A scruple is a moderate dose for an adult, operating, except under circumstances to be mentioned presently, with tolerable uniformity. The interval which elapses before it begins to operate may be so long as five hours; but, if the dose be well adapted to the individual, that is quite exceptional; four hours is a pretty frequent interval, but two hours or less is the most common interval. It may be as short as fifteen minutes, but is seldom shorter than thirty.

From these ninety observations, I conclude that chrysarobin is, in a dose of twenty-five grains for adults or of six or more for children, an emetic-purge of which the action is unattended by any inconvenient symptoms; while, on the other hand, it is as certain as other medicines which act in either of those ways, at the same time that the speed and thoroughness with which it operates recommend it for use in most of those cases in which such an effect as it produces is desirable.

Third Series of Observations.—From chrysarobin I pass to the action of chrysophanic acid. Of this body something is known, but not much. It is stated by Schroff to be mildly purgative. It is a constituent of rhubarb, which contains other active principles. It is but very sparingly soluble in most other fluids than benzole; only it is freely soluble in the alkalies, and, in proportion, in alkaline fluids. I shall again refer to this fact in considering the mode of action of the bodies under consideration. The series from which I draw the following conclusions upon the dose and action of chrysophanic acid includes one hundred and sixteen observations upon persons of all ages and both sexes.

The action of chrysophanic acid is similar to the action of chrysarobin, with this difference: that while in a suitable dose each will cause vomiting and purging, if the dose be too small, chrysarobin is most likely to purge only, while chrysophanic acid is most likely to cause vomiting only. For this reason, and from giving too small a dose, I was at first inclined to anticipate that the acid

would prove to be a simple emetic. With reference to the details of the amount and kind of action, whether on the bowels or stomach, which the action produces in a single dose, I have not been able to formulate it, and I believe I have acquired evidence enough to say that it is not possible to formulate it. I do not know of any other equally extensive series of observations upon any other given emetic or purge; but I believe that the same statement might be made of any of them, and I make this statement in that sense. A larger full dose, that is to say, from fifteen to twenty grains, will always both vomit and purge the patient very freely, at the same time that it causes an inconvenient amount of either of these effects very rarely indeed. Further, there is but little danger of inconvenience from too large a dose.

The Dose of Chrysophanic Acid.—In this case, as in that of chrysarobin, I observe first of all that, with a quantity which acts well upon a child of five or six years of age, no increase in effect is observed with the same dose upon the very youngest children. Yet further, of chrysophanic acid I am obliged to say what does not hold good of chrysarobin, that on children of less than four or five years its action is uncertain in that it sometimes fails to act entirely, or acts very feebly, or most often of all causes vomiting only. It never acts upon them with unexpected violence. Of course, it will be borne in mind, as before, that it is difficult to insure the perfect administration of powders to babies; and that an attempt to give this powder in water, contrary to instructions, may perhaps have contributed to the uncertainty. I have found that six grains of chrysophanic acid is a good dose for children of ten years and under; and that in that dose it may be depended upon, with the above exception, to operate speedily and effectually. For adults, I find the action of the acid certain in a dose of fifteen grains; upon some adults I have found ten and even eight grains act as often as fifteen grains upon other adults apparently of similar *physique;* and again I have found some, but very few, who demand as much as a scruple for the manifestation of a reasonably brisk action. But I am able to say that that is a large dose, and should not, or rather need not, be given as an initial dose to any person except in case of emergency.

The two hundred and six observations with which I have been dealing were made upon persons who were out of sorts rather than ill, with the exception of the last twenty or thirty. In these (which included cases of various acute diseases), I employed chrysophanic acid to produce what I had then ascertained to be its proper effects. I have, therefore, perhaps lacked the opportunity of observing its specific effects, if it possess any. Of chrysophanic acid I have, however, observed this effect: that whatever the condition of the patient, it causes the evacuation, one way or the other, of large quantities of bile. I have utilized this observation in a few cases of hepatic obstruction—congestive, catarrhal, and the like—with marked advantage to the patient. Rhubarb, it will be remembered, has a distinct power of increasing the amount of excreted bile, and is used, with other cholagogues, for that purpose every day. Rhubarb also contains some chrysophanic acid; and perhaps it is not going too far to suggest, upon a knowledge of the fact I have just stated, that this power of rhubarb may be owing to that constituent. At least, I consider it worth the trial whether repeated small doses of chrysophanic acid are or are not serviceable in such cases as I have just mentioned, and which are at present a little tedious of cure.

The Resin of Chrysarobin: the Fourth Series of Observations.—I have made ten observations upon adults with the resin of chrysarobin. It was made into pills with a little tragacanth and glycerine. One grain had no effect upon two individuals. In three cases, three-grain doses caused vomiting from twice to five times, and purging from five to seven times. In one case, two grains were taken by a man aged 20, instead of four, as was intended. In six hours the bowels began to act, and then they acted very loosely three or four times. There was no vomiting, but considerable nausea, which lasted for eighteen hours. In the remaining four cases, four grains were taken for a dose; and this in every case acted within two hours—in one within half an hour—vomiting being the first sign, and purging very quickly ensuing. In three of these cases, the acts of vomiting were three to five; of purging from five to ten. In the fourth, a stout woman, fairly strong and the subject of habitual constipation, the vomiting and purging were continued during five or six hours with very small intervals. She was suffering from neuralgia, which I had traced to the state of the bowels; and it disappeared during this violent action. The sickness, except in the last case, was not said to be attended by much depression. It will thus be seen that the action of the resin of chrysarobin is identical with that of the crude powder, and of chrysophanic acid, but very much more powerful.

Mode of Action of these Bodies.—Are these bodies direct irritants, like mustard or the sulphates of zinc and copper? or concentric irritants, like apomorphia? or eccentric irritants, operating like ipecacuanha, during elimination? With these questions in view, I devised the *fourth series of observations*, including one hundred cases. I shall, for the most part, avoid distinct reference to the indications which they may appear to afford. Such an investigation cannot be completed without many planned experiments upon the lower animals—experiments which I have neither the time nor the opportunity of conducting. The first question which presented itself is: Does chrysophanic acid act as a direct gastric irritant or in a more circuitous manner? Twenty observations were first made upon the modifying effect which a full or empty stomach might have upon the operation of this drug. Owing to the inherent variability of action which this shares with all other medicines

of its class, the result was not very satisfactory. I believe I am warranted in making the following statements: That, if a dose of chrysophanic acid be taken and immediately followed by a meal, its action will be considerably delayed; that, if it be taken after a meal, its action will be delayed in proportion (more or less) to the progress which has been made with digestion; that, if it be taken upon an empty stomach, its action is manifested quickly; that there seems reason to believe that fulness of the stomach or the consequent delay in action determines its effects to the bowels, without, in all cases, obviously diminishing its emetic power; but that emptiness of the stomach does determine it rather to emetic action, and does also diminish its purgative action, notwithstanding that, except in the case of babies, the latter is never entirely absent.

Does the food, then, protect the stomach from direct irritation? I made the observations with draughts consisting of ten grains of the acid, fifteen grains of tragacanth gum, and three ounces of water. This forms quite a thick solution of the gum, in which the acid is suspended. So far was this from protecting the stomach, however, that I observed action to begin earlier, to be more violent, and to be more evenly divided between vomiting and purging than after any other mode of administration.

Chrysophanic acid being soluble in alkaline (but not in acid) fluids, I made three observations with draughts composed of ten grains of the acid, fifteen minims of liquor potassæ, and three ounces of water, allowed to digest during three days. Their action was so evident, that I found it impossible to use any more so large doses. I, therefore, made seven other observations on the effect of similar draughts containing only six grains, and I found them to take all the effect which a dose of fifteen grains given as powder takes.

I made sixty observations with pills containing either the acid or the crude powder combined with confection of roses. I confine my remarks to those containing the acid, since I observe no essential difference in action between them. Each pill contained four grains of chrysophanic acid. I find the action of the drug in this form more uniform than in any other, except that of an alkaline draught. Eight grains are sufficient to take with effect in both kinds upon the majority of persons. Action is delayed almost invariably beyond two hours; often if sleep intervene, the dose taken at night does not operate until the next morning. In that case, sickness, as always, is the first effect, but the purging ensues almost immediately.

It appears, then, that to give chrysophanic acid in the form of a pill, whereby its diffusion in the stomach is delayed, or as a partial solution (in an alkaline fluid), enhances its powers; for eight grains in the former case and six grains in the latter seem equivalent in power to fifteen grains given as powder. At the same time, by both of these means its action is rendered more equable, and in both, although chiefly in the latter, delayed. On the other hand, neither increased action nor the greater facility of absorption offered by these means increases depression.

Lastly, I repeat that four grains of the resin (which I do not know to have any irritant power as a topical application) are equal to from fifteen to twenty grains of the acid as measured by its effects. From these three hundred and nineteen observations, I conclude—

1. That chrysophanic acid is an emetic purge; that its action is as certain, when given in appropriate doses, as that of any other drug which acts in either of these ways; that if either kind of action should be wanting, on account of the dose having been too small, it is the purging which will fail to appear; but that is rare.

2. That its action is favored by its exhibition in a manner favorable to its absorption; *i.e.*, by its diffusion in water, by its exhibition as a pill, and, above all, by its combination with a strongly alkaline fluid; that its action may be delayed by sleep and modified by a full stomach.

3. That its dose is, as powder, not less than six grains for babies; at twelve years, one may give ten grains; above that age, fifteen grains, a dose which it is not often necessary to increase. As a simple draught, perhaps ten grains is enough for most adults. As an alkaline draught, six grains is an average dose, if three days have been allowed for digestion and partial solution. As a pill, eight grains is an average dose, six grains often suffice, twelve grains are too much.

4. That the most convenient form for exhibition is, for adults, that of a pill. In children, the powder, which must be mixed with honey or jam, since it cannot be mixed with water; it is tasteless.

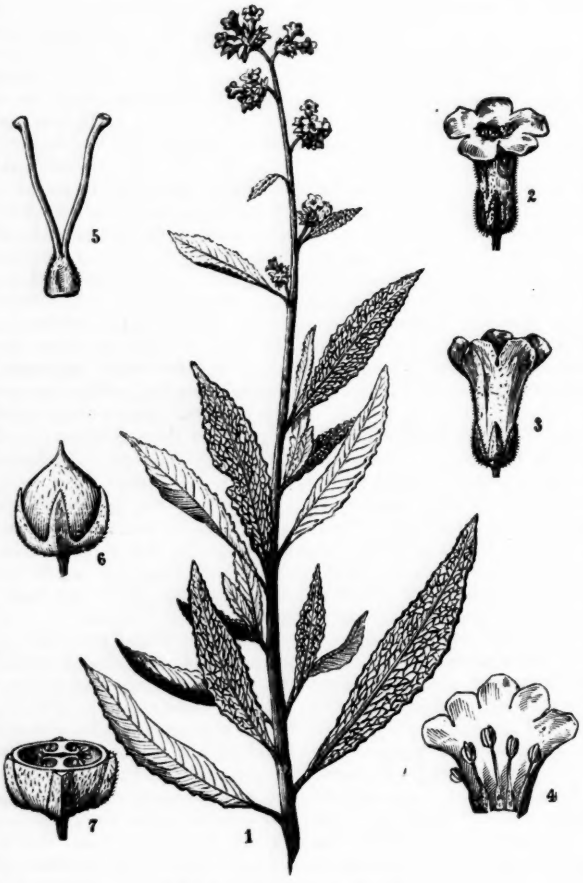
5. Lastly, that I see reason to regard chrysophanic acid as a useful addition to our list of remedies, because it affords a means of clearing out the *primæ viæ* with a thoroughness and promptitude not equalled by any other medicine with which I am acquainted, a combination of tartar-emetic and ipecacuanha alone excepted; while it is at once more certain to produce *both* purging and vomiting than that, and is unattended by the serious depression which is often an inseparable objection to its employment; that the power of evacuating large quantities of bile which I claim for chrysophanic acid especially fits it for the purpose named.

Eriodictyon Californicum.

We have already given, on page 136 of our last volume, a description of this new addition to our list of drugs, but owing to the facts that it is now to be had in the market and that an illustration in the last volume of the Proceedings of the Amer. Pharmaceutical Association enables us to show its appearance, we republish some of the facts there mentioned, which, in truth, are about all that can be said regarding it, at present.

The plant grows thriftily among the rocks in

Northern Mexico and Southern and Middle California, and is an evergreen shrub about 4 or 5 feet high. The leaves are leathery but brittle, and present a varnished appearance on their upper surface, as do also the stems, which is owing to the presence of a resinous body that also pervades the plant to the extent of 20 to 30 per cent. The leafy top of this plant is the portion used, and the manner in which they are stuck together by this gummy substance has given the plant the name *E. glutinosum* (Benth.). The taste of the leaves is very like that of the opening buds of the balsam poplar. The flowers (Figs. 2, 3, 4) are a light purplish-blue, five-lobed, style two-cleft, two stamens included, and slightly hairy near the base. The ripe fruit (Figs. 6, 7) consists of a one-celled, grayish-brown, ovoid capsule, with calyx still attached. The capsule is saturated with an oil or resin, giving it a translucent appearance.



Eriodictyon Californicum (Benth).

Among the Indians and Spaniards the plant has long been used in lung affections, and by them has been called the "consumptive's weed." Its other names are Yerba Santa (by which it is called in the trade), mountain balm, and bear's weed. The natives are said to make an aqueous decoction as a general tonic and a decoction with whiskey for chronic lung diseases and as a local application for piles.

According to H. S. Wellcome* macerating the leaves for an hour in strong alcohol gives an amber-colored resin, which is transparent and highly aromatic. Continued maceration gives another resin, dark-green in color and bitter in taste. An aqueous infusion of the dregs yields an intensely bitter extract.

A tincture made with 75% alcohol in the proportion of 4 ounces to the pint may be given in doses of one to two fluid drachms. A syrup of the resin is made by trituration with powdered talc and following the process for making officinal Tolu syrup. Such a syrup has a delicious fruity odor and taste resembling the pine-apple. A fluid extract, it is said, may also be prepared, but the formula is not given.

**The Pharmacist*, Feb., 1876.

Milk as a Diuretic.

Prof. Lee says that in anasarca the effusion disappears rapidly under the influence of a milk diet, while ascites is not affected by it. This is because ascites is dependent on some affection of the liver, or else the serous membrane which allows the liquids to transude is more or less affected in its texture. This holds equally true as regards hydrothorax, because the amount of fibrine renders the fluid difficult of absorption, and furthermore, the pleura is often diseased. The same may be said of pleurisy, excepting, perhaps, when the disease is quite recent. But in general dropsy, milk taken in doses of one-half to three litres during the day, is a most efficient diuretic.

A Convenient Mode of Dispensing Ointments.

Some years since an English pharmacist proposed that the metal tubes used to hold painters' colors might be used with advantage for dispensing cerates and ointments. In 1874 M. Jacques de May, a Parisian pharmacist, adopted the suggestion, and quite recently Dr. Arthur van Harlingen, of Philadelphia, has introduced their use in this country (*Medical Times* of April 14). These soft metal tubes can be supplied of any size, and being filled through the lower open end, the edges

are pinched and folded together, making a perfectly tight joint. By unscrewing the metal cap and pinching the tube, the desired quantity of ointment is made to exude, while the balance is completely protected from contact with the air and consequent rancidity.

French Lactucarium.

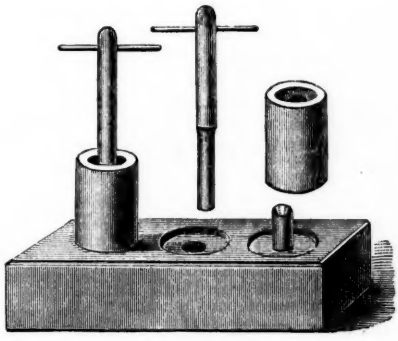
THE principal, if not the sole producer of lactucarium in France, is Mr. Aubergier, of Clermond-Ferrand in Auvergne, Department Puy-de-Dôme, whose researches on the chemistry and therapeutics of this drug are well known to pharmacists. His first experiments, which were made previous to 1841, were chiefly directed to the selection of the proper variety of lettuce, so as to obtain the largest possible yield of lactucarium. As a result of his investigations he began the cultivation of *Lactuca altissima* Bieb., a native of the Caucasus, which is a gigantic herb (hence called *laitue gigantesque*), having, when cultivated, a height of 9 feet, and a stem 1½ inches in diameter.* The manner of collecting the juice differs from that pursued in Germany or Scotland; instead of cutting off the stem near the top, and removing successive slices every day, transverse incisions are daily made at the time of flowering, into the stem from above downward, and the juice which flows from them is collected in a glass vessel. By the time this is full, the juice has coagulated and is removed, after which it is shaped into circular cakes of 1½ inches in diameter, which are dried by exposure to the air upon sieves.

While it was found, in the commencement of the enterprise, that one person could collect at most 60 grammes of the juice per day, Mr. Aubergier has succeeded in training his employés—and he employs only women for this purpose—so well, that the mean daily quantity collected by one person now amounts to about 600 grammes (about 1 lb. 5 oz.), while some very active workers occasionally gather as much as one kilogramme. This activity and skill is stimulated by premiums, which are given for any quantity returned above 300 grammes, and further by a sort of co-operative partnership, the most expert workers receiving at the end of the season some extra gratuities proportionate with the total yield. Dry seasons are very unfavorable to a large yield; and in order to be able to supply the demand, Mr. Aubergier takes advantage of moist seasons to lay in a large supply, sufficient to last for several years ahead.—*La Ruche Pharm.*, 1877, 21.

Pitury: an Australian Rival to Coca.

BARON VON MUELLER, of Melbourne, has at length determined the botanical source of the "Pitury," a stimulant long known to be in use by the aborigines of Central Australia and said to be of marvellous power. After some years of efforts to obtain a specimen of the plant, he has now received some leaves, and has with certainty determined them to belong to *Duboisia Hopwoodii* F. Muell., a bush referred to the orders Solanaceæ, or Scrophulariaceæ, which grows sparingly in the desert scrubs from the Darling River and Barcoo to West Australia. In a recent communication to the *Australian Medical Journal*, Baron von Mueller states, that the natives chew the leaves to invigorate them during their long foot-journeys through the deserts, just as coca leaves are used in South America. Those living near the Barcoo travel many days' journey to obtain the precious foliage, which is broken into small fragments, and carried about by them in little bags. It is also employed to excite courage in warfare.—*Pharm. J. and Trans.*

* Prof. G. Planchon believes it to be a mere variety of *Lactuca Scariola* L. See *Pharmacographia*, p. 354.



A Simple Pill-Press.

SUCH of our readers as are mechanically inclined and have need for a pill-press can find a good model in the one contrived by Professor Remington and which we here illustrate. This machine is constructed to make two sizes of pills, viz.: two- and three-grain pills, on one end and four- and five-grain pills on the other. The base is of cast-steel and the cylinders have funnel-shaped openings which facilitate the introduction of the powder of which the pill is to be composed. The countersunk depression in the base prevents slipping of the cylinder under the effects of a side blow. The centre depression has an opening through which the shaped pill can be pushed after it has been formed. In all cases the powder should be slightly damp, to prevent the pills splitting transversely and to keep the powder from being blown out at the top of the cylinder as the blow is struck.—*Proc. Amer. Pharm. Assoc.*

Atropia in Forensic Medicine.

DR. A. RABUTEAU calls attention to the well-known fact that large doses of morphia (0.2 gm. morph. muriat.) may be injected into the jugulars of dogs with impunity, whereas very small doses of thebaia, to which man shows a greater tolerance, are fatal to dogs.

A still more remarkable fact, equally well established, is the immunity of rabbits and Guinea pigs against atropia, of which 0.5 grammes in-

jected subcutaneously barely suffice to produce midriasis, injections of the vessels of the ear, acceleration of the pulse, and slight diarrhœa. A heavy Guinea pig, weighing 540 grammes, received with immunity 0.2 atropia in 2 ctm. water subcutaneously, while even 0.005 atropia, hypodermically, in man produced grave toxic effects. A tolerance in man corresponding in weight to the Guinea pig should be 24 grammes.

These results from the most accurate experiments are of the highest importance in forensic attempts to establish the nature of poisons isolated from the cadaver of man injected into the bodies of animals. As in the rodents mentioned, midriasis ensues only after enormous doses; even if instilled into the eye it will be easily seen that the small quantities isolated from dead bodies will rarely suffice to produce the expected result in rabbits. If Tardieu's method of utilizing rabbits in this way be relied upon, we should often be led astray. The carnivorous animals should alone be used for atropia, especially dogs, as they, of all animals, show most plainly, from minimal doses, its well known effects upon the pupil.—*Cincin. Lancet and Observer.*

Peas Colored by Copper.

At a recent meeting of the Academy of Sciences, in Paris, M. Galippe gave the results of his examination of peas made artificially green by means of copper, of which much has lately been said. After careful chemical analysis performed on ten tins of peas of different brands, he came to the conclusion that, presuming a tin of peas would be consumed by four persons, each of these would ingest about fourteen *milligrammes* (about a quarter of a grain) of a compound of copper. He observes that such a quantity, even of sulphate of copper, could not be injurious, but that in these preserved peas sulphate of copper does not retain its usual characteristics; it has no unpleasant flavor, is very slightly soluble, and in fact is an inert body. If the nature of the copper-compound be not yet quite determined, the conditions under which it is produced are well known. To produce it, it is necessary that the peas should be thrown into the mixture intended to preserve their natural color in the freshest possible state. A sudden change of temperature or a storm may prevent the fixing of the coloring matter, so that the very greenness of the preserved peas is in some sort a guaranty of their good quality. M. Galippe has experimented on his own person, by consuming these peas daily for ten days, without having experienced any other inconvenience from them than the monotony of seeing the same dish make its appearance so frequently. He also says that he is acquainted with many scientific persons who habitually use these preserved peas as an article of diet, without experiencing any ill-effects from so doing. He also says that in the manufactories where these peas are put up, when a tin is badly soldered, it is given to the workmen, so that some of them make entire meals of these vegetables without suffering in the least. M. Galippe is, therefore, of opinion that these preserved peas contain too small a quantity of copper to be injurious to the public health; he is further convinced that this quantity might be further diminished if the manufacturers were to come to a mutual understanding as to the quantity of copper strictly necessary to give the peas the requisite green color, without varying from it either to a greater or less extent.

Milk Analysis.

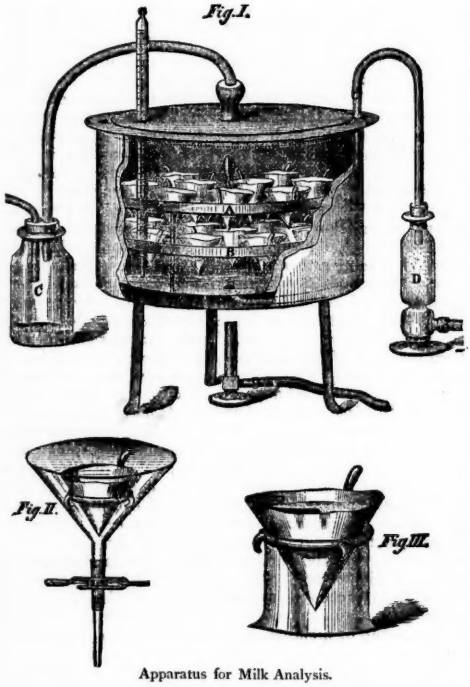
E. H. von Baumhauer read a paper on milk analysis at the Buffalo meeting of the American Association for the Advancement of Science, in which the following method and apparatus was recommended: A disk of copper, standing on feet 10 cm. in height (Fig. 1), is pierced with 10, 12, or a larger number of round holes, having a diameter of 5 cm., and placed at regular distances. In these holes are hung rings, 4 cm. in diameter, made of glass rods, and having little curved arms of glass. In each of these rings is placed a filter-paper, folded in quarters, and filled with sand up to ½ cm. of the edge. Each filter, before folding, is to be 10 to 12 cm. in diameter, and the sand is to be prepared by selecting that which is white and clean; digest it with hydrochloric acid, wash well with distilled water until the latter yields no trace of acid, then dry the sand, ignite it in a Hessian crucible, and while still red hot pour the contents from a height upon a clean stone, in order that the carbonized organic matter may be burned while falling through the air. It may then be preserved for use in well-corked, clean bottles. The filter-paper must also be prepared by washing with hydrochloric acid and water, dried in a rising temperature up to 110° C., and preserved in a rubber-stoppered bottle.

Near each hole in the disk a number should be scratched, and in its centre a wooden handle is inserted by which to raise it. The heating apparatus consists of a copper bath with double walls, between which is placed paraffine. A tube connecting with a close-fitting cover communicates with a Woulfe bottle (*C*) in which the watery vapor is condensed, and which is connected with a strong aspirator. The cover and disks also give passage to a thermometer, as shown in the cut. A copper tube, after following a tortuous course between the walls of the bath, terminates at one end in the middle of the air-bath, and at the other is connected at the close of the operation with the calcium chloride or sulphuric acid apparatus *D*.

As many glass flasks and funnels are required as there are analyses to be made; the capacity of each flask being 100 c.c., and indicated by a mark on its neck. The funnels (Fig. 2) have their edges ground, and are covered with watch-glasses. All these are numbered. The funnels are of such size that the filters hang free when placed on the rings (as in Fig. 2). To the stem of each funnel is

connected a caoutchouc tube, closed with a spring clamp. Finally an equal number of beaker glasses are used as "desiccators" by placing in them triangles upon which the filter-rings can rest. At the bottom of the glass is placed calcium chloride, and the whole is covered with a hood of India-rubber.

Having filled the filters with sand, they are placed on the support and heated for ½ an hour at 110° C.; after cooling them in the desiccators they are weighed, a beaker from which the bottom has been cut (Fig. 3) serving to support them during this operation. Then 10 c.c. of milk, at a temperature of 15° C. are, by means of pipettes, placed in each filter, care being taken to moisten the sand evenly, save the exterior edge. When all are



Apparatus for Milk Analysis.

charged the support is placed in the air-bath, and their temperature raised to 60° or 70° Cent., which heat is maintained so long as moisture is deposited in the Woulfe bottle. The aspiration is then moderated, and the air, previously dried, is passed through the apparatus, which is then heated to 105° C. for a full half hour. The desiccation consumes 4 to 5 hours, the only need for care being to examine the thermometer. The filters are then left to cool for an hour in the receivers and weighed again, and the difference between the weighings gives the sum of fixed constituents of the milk.

If the point of the filter drips before 10 c.c. of milk have been absorbed by the sand, it indicates an adulteration with water. In this case another filter must be used, and the addition made in portions as the drying goes on.

To determine the proportion of fat, the filters with contents are placed in the funnels, filled with anhydrous ether, and left standing half an hour. The ether is then drawn off and the operation repeated until the ether runs limpid. After drying, the loss in weight will then indicate the proportion of fat.

To determine the sugar the same course is pursued, warm water being used instead of ether, and the water is collected in the flasks before mentioned. After being cooled to 15° C., and diluted to 100 c.c., the sugar in solution is estimated by Mulder's test.

Preparation of Pure Nitrogen.

It is well known, that the continuous preparation of nitrogen by passing a stream of atmospheric air over heated copper turnings, is interrupted, as soon as the latter has been covered with a thick layer of oxide. To obviate this difficulty, S. Lupton proposes to pass the air previously through strong water of ammonia. The ammoniacal gas, which accompanies the air, reduces the cupric oxide at the moment of its formation and its nitrogen joins that of the air. The copper, therefore, is not diminished or consumed, and the process is simply as follows:

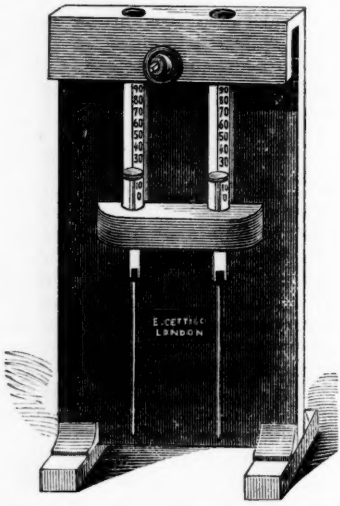
$$6N_2+3O_2+4NH_3 = 6H_2O+8N_2.$$

The resulting nitrogen is so pure, that melted potassium remains untarnished therein.—*Zeit. Oest. Ap. Ver.* fr. *Chem. News.*

Mode of Action of Potassium Iodide.

Dr. Kämmerer explains the medicinal action of this salt by referring to its decomposition by the action of ozonized oxygen, and by carbonic acid gas. In solutions of potassium iodide, ozone causes separation of free iodine; and when in dilute aqueous solution, the pressure of carbonic acid gas breaks up the salt into hydrogen iodide (hydriodic acid) and potassium bicarbonate, but the free hydriodic acid is readily decomposed by free oxygen, even when not ozonized into iodine and water. Mon-iodide of potassium, when introduced into the stomach, is absorbed directly into the blood. Here it meets with a large quantity of carbonic acid gas at a high pressure, and is decomposed into hydriodic acid and potassium bicarbonate, and the former is then immediately split up by the oxygen in the blood into free iodine and water. And even if the decomposition of the iodide by the carbonic acid does not take place, the oxygen in the blood, which closely resembles ozone in its properties, is capable of setting the iodine free. This free iodine does not act upon the inorganic constituents of the blood, since, on the others—between potassium phosphate and iodine—a reaction may take place, leading to the formation of an inferior oxide of iodine (subiodic acid), which last is reducible with extreme facility, and consequently effects rapid combustion of organic material,

free iodine being at the same time set free, which again becomes converted into hydriodic acid to undergo the same series of changes. The action of iodide of potassium in augmenting the temperature of the blood and causing emaciation, Dr. Kämmerer considers to be fully explained by the action of the drug in increasing the combustive operations in the blood.—*The Practitioner*, from the *Med. Chir. Rundschau.*



Apparatus for Comparing Depth of Color.

Dr. E. J. Mills, of the Andersonian University of Glasgow, has constructed an apparatus for estimating the relative proportions of color or tint in different samples of liquids. From the accompanying cut it will be seen that it consists of two graduated tubes, drawn out below, and corked with perforated corks. Through these corks are passed two glass rods, carrying at their upper ends two flat disks of opal glass, like pistons, which fit loosely into the tubes, so as to allow the liquid to pass the pistons. To use the apparatus the tubes are filled with the solutions to be compared, and the piston of the tube containing the standard solution is set at zero, while the piston of the other tube is then moved up or down, until, on looking down into the tubes from the top to the opal disks, the two solutions appear indentical in color. The position of the piston is then read off, and indicates the relative amount of color in the liquid. The apparatus is said to be extremely well adapted for nesslerizing, and for the taking of colors of sugar syrups, and will certainly enable such estimations to be made with increased accuracy. Messrs Cetti & Co., of Brooke Street, Holborn, London, are the manufacturers.—*The Analyst*, No. 11, p. 201.

The Degree of Doctor of Pharmacy has been legally established in Holland since April 3, 1876, and a special chair on Pharmacy has been established at the Dutch Universities.

RECENT PAPERS.

Pharmaceutical Journal and Transactions. Nos 351–355.

E. M. Holmes: "An Adulteration of Aconite Root." [Reporting the admixture to genuine aconite, of the root of *Imperatoria Ostruthium*, masterwort. The author also strongly advocates the cultivation of aconite in England, so as to improve the quality of the commercial drug. See p. 164.]

M. Herincq: "Silphion of the Ancients, and its Alleged Modern Representative." [An abstract of the author's pamphlet on this subject, in which he shows almost conclusively that the *Silphium Cyrenaicum* of Laval (or *Thapsium Silvium* of Viviani) is really identical with *Thapsia garganica* D.C. This Silphium, it will be recollected, forms at present the basis of a largely-advertised panacea for lung diseases. See New Rem., v., 275, 362.]

J. C. Thresh: "Glycerinum Tragacanthæ" [Describing a series of experiments made with this excipient upon various pill-masses. The Glycerate of Tragacanth is made by mixing 3 drachms of powdered tragacanth intimately with 6 drachms of glycerine, and adding 6 drachms of water. The mixture becomes almost transparent and very tenacious after a few days. Or it may be prepared by heating the ingredients on a water-bath, when the change takes place at once. While it was found, however, to answer well in such cases as Pil. Coloc. Co., Pil. Gambog. Co., Pil. Rhei Co., etc., it failed to produce good results in other cases.]

Editor's Review of the Month: "In the course of this paper, mention is made of large quantities of *Barbadoes* and *Curaçao aloes* having reached the London market, the latter kind being rather scarce. It has much the appearance of Barbadoes aloes, but is rather more glossy and has a different and somewhat sulphurous odor. *Sarsaparilla* has also appeared in very large quantities. Besides these are noticed *Carnauba wax*; *Cocum butter*, a concrete oil from the seeds of *Garcinia purpurea* Roxb., officinal in the Indian Pharmacopœia, and used as a basis for ointments; *Ceylon cardamoms*, a long, gray-tinted variety; *China cantharides* (*Mylabris Cichorii* and *M. phalerata*), which contain more cantharidin than the Spanish fly; *Gum acaroides*, a resin which does not seem to have been turned to as much account as it is capable of. It is the product of one of the grass-trees of Australia, and contains a quantity of cinnamic acid, and an oil which has the odor of hyacinths—probably styrol. *Japanese aconite* has also been offered in larger quantities. A curious specimen of *Balsam of Tolu*, which was evidently a fictitious article, has lately been met with. It yielded no crystals of cinnamic acid, dissolved in benzole and carbon disulphide, also in alcohol by heat, a portion separating on cooling. It had an odor like that of boiling syrup or molasses, and an extremely tenacious consistence.]

B. S. Proctor: "Medicine Measures." [Proposes to dispense with each prescription a cheap medicine measure for the exact administration of the dose. At the same time he recommends that physicians should so word their directions as to do away with the indefinite terms, "teaspoonful," "tablespoonful," etc., and to use instead the fluid-ounce and its subdivisions.]

W. Willmott: "Glycerole of Nitrate of Bismuth." [Giving further information on this new preparation. A mixture of glycerine and water, containing only 15 per cent. of the former, is able to dissolve double its own weight of bismuth nitrate, so that the glycerine in this thin or attenuated condition dissolves no less than from 12 to 14 times its own weight of the *crystals* of bismuth nitrate. In this proportion the bismuth is subsequently thrown down, and a gas resembling one of the lower oxides of nitrogen is disengaged. Contrary to what might be expected, the solvent action of the glycerine increases until in glycerine itself, in its pure and undiluted form, weight for weight dissolves only with difficulty and after some considerable time.]

B. H. Paul: "Examination of some Commercial Samples of Citrate of Iron and Quinine." (See p. 137.)

W. G. PIPER: "The Presence of Ammonia in Bismuth Subnitrate." [The author's attention having been called to the evolution of ammoniacal gas from a mixture containing bismuth subnitrate, sodium bicarbonate and borax, he found on investigation: 1. That the ammonia was evolved from the bismuth salt; 2. That it was present in most samples of that salt to a very small but variable extent; 3. That the ammonia was formed during the action of the bismuth on the nitric acid.]

A. W. POSTANS: "Glycerole of Salicin and Glycerole of Pepsine and Salicin." [Stating that a permanent solution, with the aid of heat, may be made, containing 5 grains of salicin in a fluid drachm of glycerine. The second preparation is made by digesting for a week the fresh, finely-cut, and previously well-cleansed stomach of the pig in as much glycerine as will cover it. One drachm of this mixed with 1 ounce of water acidulated with 15 min. of hydrochloric acid dissolve 700 grains of moist fibrin at 100° F. Equal parts of this solution and the glycerole of salicin are mixed, forming a solution possessing tonic and digestive properties in a high degree.]

The Chemist and Druggist.

April. M. HERLAND: "New Method of Extracting Iodine from Kelp" (from *Comptes Rend.*). See next number.

American Journal of Pharmacy.

May. A. B. TAYLOR: "The Pharmacopœia of the United States and the American Medical Association." [This is a reply to Dr. E. R. Squibb's proposition of modifying the plan of the revision of the next U. S. Pharm. The paper does not admit of condensation, and we would here merely call attention to it.]

G. W. KENNEDY: "Elixir Glycyrrhizæ." [Proposing the following formula: Take 2 troy oz. of liquorice-root in moderately coarse powder, moisten the powder with sufficient of a mixture of 6 fl. oz. each of stronger alcohol and water, allow it to stand 12 hours, pack in a conical percolator, and pour on the balance of alcoholic mixture; follow this with dilute alcohol, until 12 fl. ozs. of percolate have passed. To this add 4 fl. oz. of syrup, and finally 1½ fl. drachm of orange (1 : 15) and 8 min. of essence of cinnamon (1 : 15).]

JOS. P. REMINGTON: "Aromatic Elixir of Licorice." (See Presc. & Form.)

THOS. S. WIEGAND: "Basham's Mixture and Haller's Elixir." (See Presc. & Form.).

The Analyst. Nos. 10–13.

E. FRANCIS: "On Prussic Acid from Cassava." [Two species of Cassava or manioc are generally known; one of these is *Manihot utilissima*, or Bitter Cassava, the source of tapioca, which in the fresh state is poisonous, owing to the presence of hydrocyanic acid; the other is *Manihot Aïpi*, or Sweet Cassava, which is considered harmless and directly used as food. The author has examined both species and determined the presence of the acid *in both*. The average quantity obtained from the bitter cassava was 1.927 grains per lb.; that obtained from the sweet was 1.175 grains per lb. of fresh root.

A. W. BLYTH: "The Poison of the Cobra di Capello." [Announcing the presence therein of a highly poisonous crystallizable acid, named by the author *cobric acid*, which may be obtained by sublimation from the dried poison, or by throwing it down with lead acetate and separating in the usual manner, or by exhaustion with ether. The average amount of cobra poison which is present in the fang of a snake is 6 grains, containing 2 grains of solid matter, of which 0.6 grains are cobric acid.]

Canadian Pharmaceutical Journal.

April. MONAD: "On the Spontaneous Alteration of Anhydrous Hydrocyanic Acid." [Stating that the cause of the speedy decomposition is the alkalinity of the calcium chloride used in drying it. If neutral calcium chloride, however, is used, which may be obtained by evaporating its slightly acid solution and stopping as soon as dryness is reached, anhydrous hydrocyanic acid may be prepared, which can be kept indefinitely. The theory is that calcium cyanie, which the acid forms with any free lime in the calcium chloride, is decomposed by water into calcium formiate and ammonia, the presence of which latter is known as determining the speedy alteration of the anhydrous acid. Heating the pure acid in a sealed tube, for four or five hours, at 100° C., also produces its decomposition.]

Archiv der Pharmacie.

March. F. A. FLÜCKIGER: "On the Polarization of Ethereal Oils." [Showing that practical pharmacy can gain but little, directly, from the determination of the rotary power of essential oils on polarized light, since there are so many varying constituents, even in pure oils; the total rotary power of any one specimen of oil being the resultant of the individual powers of all the constituents.]

E. MYLIUS: "On the Artificial Oil of Mustard of Commerce." [The author has examined two samples of this and found it to contain in 1,000 parts: 0.2 of hydrocyanic acid; 8 of carbon disulphide, 922 of allyl mustard oil, 40 of polysulphides, probably allyl trisulphide; 30 of sulphuretted nitrogenized bodies. He states that the commercial oil, on distillation, yielded him about 90 per cent. of colorless oil of mustard of pure odor, while the other 10 per cent. of impurities made it unfit for pharmaceutical purposes. He therefore recommends to manufacturers to rectify their crude oil before putting it on the market. The author also states that manufacturers are not likely to prepare the artificial oil in the manner which Hager quotes in his *Commentar zur Pharmacopoea Germ.*, from potassium sulphocyanide and iodide of allyl; but that they probably start from allyl alcohol, making an allyl-sulphate, and distil a dry mixture of this with potassium sulphocyanide.]

TH. HUSEMAN: "Studies on some less known Poisons." [Showing that the statements of older authors in respect to the toxic effects of large or long-continued doses of ammonium chloride (muriate of ammonia) are well founded. Indeed, all ammoniacal salts are poisonous in certain doses, chiefly the empyreumatic carbonate (irrespective of its causticity, which acts only topically), the bromide and sulphate. Organic compound ammonias, such as propylamine and trimethylamine, also act toxically. These effects are naturally more easily induced by subcutaneous injection (into the veins) than when administered internally. See the original.]

D. J. NESSLER: "On the Preparation and Preservation of Medicinal Wines." [Experience has taught wine producers to keep the bottles containing wine not upright, but lying upon their side, so as to prevent the access of air to their contents. The effect of air consists, according to Pasteur, in the formation either of *Mycoderma vini*, or of *Mycoderma aceti*. In presence of the former the wine is converted into carbonic acid and water; in presence of the latter into acetic acid and water. According to the author's investigations the first-mentioned cryptogam makes its appearance generally in wine containing less than 11 per cent. alcohol, while the second kind is mostly developed in stronger wines, such as madeira or sherry. To prevent the spoiling of medicinal wines, especially wine of pepsine, or wine of cinchona, it is absolutely necessary to fill the flasks full, to cork them well, and to exclude the air perfectly, which is best done by laying them upon their side.]

Berichte d. Deutsch. Chem. Gesellschaft. 1877. Nos. 1–7.

FERD. TIEMANN AND BENNO MENDELSOHN: "On the Constituents of Beachwood-tar Creasote." [The portion boiling at 220° C. of the acid oils of this creasote consists mainly of creasol (or creosol; not identical with cresol) and of phlorol; the former consists of $C_8H_{10}O_2$; the latter of $C_8H_{10}O$.]

BR. RADZISZEWSKI: "On the Phosphorescence of Lophin." [Lophin or pyrobenzoline is a product of the dry distillation of hydrobenzamide, which is itself produced by the action of ammonia on pure bitter almond oil. If a few centigrammes of lophin be covered in a test-tube with concentrated alcoholic soda or potassa solution, a *soft white light* makes its appearance, which becomes more intense on heating, and is very persistent. In presence of greater quantities, the light produced is so strong that surrounding

objects may be recognized. The finest effect is produced by shaking together filtered alcoholic solutions of potassa and of lophin. In a subsequent paper, the author mentions some other substances, which offer the same phenomena under like circumstances, namely, paraaldehyd, metaaldehyd, aldehydammonia, furfurin, hydranisamid, anisidin, etc. All these bodies are aldehydes or products of aldehydes. This led the author to investigate formaldehyde and glucose, in order to determine whether these are also phosphorescent, being also aldehydes. In the case of formaldehyd, this was proved at once; and the author suspects that the phosphorescence of the glow-worm (*Noctiluca miliaris*) is owing to the presence of the aldehyde of formic acid. Glucose shows the phosphorescence best by passing a stream of oxygen through a hot alcoholic solution of glucose and potassa.]

ERNST SCHMIDT: "On some Constituents of Cubebs."—[Asserting the correctness of his formula for cubebstearopten (a camphor-like compound, which separates from the ethereal oil), namely, $C_{15}H_{24},H_2O$. The author has also reëxamined the constitution of cubebin, which is a crystalline resin, produced by oxidation from oil of cubebs, and which is formed thus: $2C_{15}H_{24}$ (oil of cubebs)$+9O_2=9H_2O+C_{30}H_{24}O_9$ (cubebin).]

SAME: "On Bromoform."—[The author has redetermined the spec. grav. of pure bromoform, boiling at 149–150°, and finds it to be 2.775 at 14.5° C.]

SAME: "On Morphia Hydrobromate and Hydriodate."—[According to Pelletier, the hydriodate, produced by solution of morphia in hydriodic acid, forms a white silky salt, tolerably soluble in water; but, according to Winkler, who prepared it from morphia acetate and potassium iodide, it is scarcely soluble in water. The author has prepared it by both processes, and finds it to crystallize, in each case, in long silky needles, grouped as rosettes, of the composition $C_{17}H_{19}NO_3HI,2H_2O$. The hydrobromate may be prepared in the same manner, crystallizes in white needles, grouped in bunches, and consists of $C_{17}H_{19}NO_3$-$HBr,2H_2O$.]

ROB. MÜNCKE: "Gas and Blast Lamps." (See July No.)

SAME: "A Double Aspirator." (See July No.)

The New York Medical Journal.

June. A. E. KNECHT: "Woorara in Tetanus." [A translation by B. A. Watson, of a paper by Knecht, in *Schmidt's Jahrbücher*, which gives the details of the fifteen recorded cases treated wholly or in part by this agent.]

GEORGE B. FOWLER: "On a New and Simple Method for the Quantitative Estimate of Urea." [See July No.]

Cincinnati Lancet and Observer.

March. FORDYCE GRINNELL: "Quiniaphobia." [The personal experience and views of a surgeon to the Wichita Indian Agency with regard to the value of the remedy.]

S. H. COLLINS: "The Effects of Salicylic Acid in Six Cases of Acute Rheumatism."

British Medical Journal. Nos. 852–855.

March 10. SAMUEL MCBEAN: "Erythroxylon Coca in the Treatment of Typhus and Typhoid Fevers, and also of other Febrile Affections." [Believes that the remedy may arrest the rapid metamorphosis of tissue change which occurs in this class of affections, and reports three cases.]

WILLIAM SQUIRE: "Use of Salicylate of Soda." [Reports a case to show that in rheumatic fever the value of the remedy is not confined to the period of greatest pyrexia.]

W. THOMSON: "The Treatment of Intermittent or Fen Fever by Salicine." [The success which attended the use by him of full doses of salicine leads him to think that the failure of the old-fashioned decoction of willow-bark, both in the hands of inhabitants in the marshy districts, and of the medical men, was from the want of concentration, or the inability to prescribe a sufficiently large dose of the specific drug.]

JOHN CAVAFY: "Failure of Salicine, and Success of Cold Packing in a Case of Hyperpyrexia." [Comments on a case reported under this heading in the *Journal* of April 14th, and cites case to show that hyperpyrexia may be recovered from under foods and stimulants only.]

A. D. KEITH: "Treatment of Psoriasis by Goa-Powder." [Reports a case where the success was "marvellous." A man in good circumstances and sixty-three years old, had psoriasis for a number of years, and was entirely cured by the use of less than four ounces of goa-powder of the strength of ninety grains to the ounce of lard. See also July No.]

GEORGE JOHNSON (p. 607): "Another Case of Poisoning by the So-called 'Homœopathic Solution of Camphor.'" [Seven doses of three drops each, taken by a young man aged 18, were followed by an epileptic fit, something neither he nor his family had ever suffered from.]

J. ASHBURTON THOMPSON (p. 607): "Deductions from Three Hundred and Nineteen Observations of Chrysarobin." (See p. 166.)

J. IVORY MURRAY (p. 609): "On a New Remedy in Certain Forms of Skin-Disease." [Called by the Chinese *Tong Pang Chong*, of which a fluid extract is curative in cases of tinea and eczema as a local application. Mr. Hooker, of the Kew Museum, says the root is the product of a Berberidaceous plant, and nearly identical with *Akebia quinata* (Decaisne), and Mr. John Thomson has extracted a crystalline substance. Applied by painting the affected part with a camel's-hair pencil at bed-time. For sale by Mr. Edwards, 38 Old Change, London.]

A. W. M. ROBSON (p. 610): "Pityriasis Versicolor Treated with Goa-Powder."

THOS. E. JONES (p. 610): "Local Effects of Chrysophanic Acid."

EDITORIAL (p. 622): "Metallotherapy." [See July Nos.]

Mouvement Médical.

April 21. M. PAUTIER: "Phosphate of Lime in Wasting Diseases of Children." [The author claims to have had considerable success with this remedy in the form of chlorhydrophosphate, in wasting diseases of children, and of adults where the preparations of iron were inefficacious.]

Bulletin de Thérapeutique.

M. M. FELTZ AND RITTER: "Acute Poisoning by the Acetate of Copper." [The authors have arrived at the following conclusions:

1. The acetate of copper is more active than the sulphate.

2. The longer the animals have fasted, the more active are the symptoms of poisoning.

3. A poisonous dose of acetate of copper imparts so strong a taste to food, either solid or liquid, that it is impossible to swallow it unawares.

4. The appearance of icterus indicates that, in subacute poisoning by acetate of copper, there is a supersecretion of bile analogous to that produced by arsenic, antimony, phosphorus, etc.]

M. BOUCHARDAT: "Sulphate of Cinchonidine." [The author recommends that this alkaloid should be substituted for the sulphate of quinine bath as a febrifuge in intermittent fever, and as a tonic in those diseases for which the latter is usually prescribed. Its action in his hands has been identical with that of quinine.]

Gazette Hebdomadaire. Nos. 7–17.

H. CHOUPPE: "Metallotherapy."

DR. ONIMUS: "Errors which may be committed in the Employment of Electricity for Physiological Experiments."

V. FELTZ: "New Experiments with Fuchsine." [As the result of these experiments M. Feltz has arrived at the following conclusions, viz.:

1. Pure fuchsine is not a poison.

2. Pure fuchsine, and even the ordinary fuchsine of commerce, in the doses in which it is employed for the coloration of wines is not deleterious. The accidents which have been noticed are due rather to the products employed in the fabrication of falsified wines.

3. Fuchsine in moderate doses (5 to 15 centig.) continued for a long time becomes injurious, from the fact that it

eliminates through the kidneys so great a quantity of phosphorus, and thus causes debility.

4. Fuchsine, unless administered in solution, is not eliminated through the kidneys.

5. In two cases of albuminuria the administration of fuchsine caused the albumen to disappear. (See *Gaz. Hebd.*, No. 25, 1876.)

6. The employment of fuchsine for the coloration of wines should be forbidden, not because it is injurious in the doses employed for that purpose, but because it permits, on account of its great coloring power, falsifications which would not be possible without it.]

V. FELTZ AND E. RITTER: "Accidents caused by the Injection of pure Fuchsine into the Blood." [In the course of their experiments they noticed that the animals presented symptoms similar to those of alcoholic intoxication.]

DRS. HARDY AND GALLOIS: "Experiments with Strophantine." [The active principle of the Strophantus hispidus has never been isolated. Frazer has obtained an extract, supposed to contain an alkaloid, which he has provisionally named Strophantine. It is extremely poiso nous, a few crystals placed under the skin of a frog's foot arrest the action of the heart in two or three minutes. The tufts of the grains were analyzed separately by Hardy and Gallois, and found to contain a true alkaloid which does not arrest the heart's action; they named it "Ineine."]

M. GRONIER: "Poisoning by Arsenuretted Hydrogen." [The author observed that the miners at Saint Etienne, who were in the habit of using bichromate of potassa batteries in a circumscribed space for a long time, exhibited symptoms of arsenical poisoning. Impure sulphuric acid, which almost invariably contains arsenic, was employed, and when the piles were working, arsenuretted hydrogen was disengaged.]

MM. FELTZ AND RITTER: "Acute Poisoning by Sulphate of Copper." [After a series of experiments upon frogs, pigeons, rabbits, and dogs, the authors conclude that sulphate of copper cannot be considered innocuous, although its action is not fatal in the immense majority of cases.

It is fatal only when it does not cause immediate and energetic vomiting, and even then the dose must be so large that it could not be taken unawares in the food.]

Mouvement Médical. Nos. 7–11.

P. VIGIER. "Preparation of Picric Cotton for dressing Wounds." [After a trial of various methods the author has resolved upon the following as the most efficient: Soak 10 grammes of carded cotton in a solution of 25 centigr. of picric acid and 25 grammes of either alcohol or ether. Dry it with a mild heat.]

TANRET and VILLIERS. "A Saccharine Matter obtained from Walnut Leaves."

[By treating the leaves with water a saccharine matter is obtained.]

DR. JARDIN: "The Action of the Balsams in general and that of Buchu in particular in the Treatment of Diseases of the Urinary Organs."

DR. HUGUES: "Eau de Cologne as an Anæsthetic."

[A handkerchief saturated with eau de cologne and held to the nose for 8 or 10 minutes caused complete insensibility, lasting from half an hour to an hour, or more.]

Bulletin de Thérapeutique. No. 5, 6.

DR. PETER: "Cold Baths in the Treatment of Typhoid Fever."

DR. GARNIER: "Case of Intestinal Occlusion cured by Carbonic Acid."

[A tube was introduced into the rectum, to the outer extremity of which was attached, by rubber tubing, an ordinary siphon of Selters water. Its entire contents were injected, and relief was immediate.]

Pharmaceutische Centralhalle. Nos. 6–17.

E. SCHOBIG: "On the Purification of Hydrogen Gas." [It being often important to have absolutely pure hydrogen, the author has examined the various possible gaseous contaminations, such as arsenetted, antimonetted, phosphoretted hydrogen, carbonic acid and sulphydric acid gas, and found that there is one solution which is capable of removing most of these compounds, namely, a solution of potassium permanganate. The generator should be first connected with a wash-bottle containing soda solution, in which would be retained the carbonic and sulphydric acid; then the gas should be passed through a neutral or acidified solution of potassium permanganate, in which the other impurities would be retained, and finally it should be passed through sulphuric acid, if it is wanted completely dry. In this manner hydrogen is absolutely freed from odor.]

DR. H. HAGER: "Saturation-Table of Salicylic Acid."

Saturated, or neutral solutions of *sodium salicylate*, may prepared by the following table:

5.0	of salicylic acid	require	3.25	sodium	bicarbonate.
6.0	"	"	3.90	"	"
7.0	"	"	4.55	"	"
8.0	"	"	5.20	"	"
9.0	"	"	5.80	"	"
10.0	"	"	6.50	"	"

Or, to state it more correctly, *the weight of salicylic acid, multiplied by* 0.65, *gives the weight of sodium bicarbonate necessary for saturation.*

If it is desired to use crystallized sodium monocarbonate, or sal soda, the proportions will be as follows:

5.0	of salicylic acid	require	5.2	of sodium	carbonate.
6.0	"	"	6.3	"	"
7.0	"	"	7.3	"	"
8.0	"	"	8.3	"	"
9.0	"	"	9.4	"	"
10.0	"	"	10.4	"	"

Or, to state it more exactly, *the weight of salicylic acid, multiplied with* 1.04, *gives the weight of sodium carbonate necessary for saturation.*]

P. PICARD: "Determination of Urea in the Blood. (See July No.)

H. HAGER: "Gallo-Tannic Acid a Reagent for Ammonia." (See July No.)

Liebig's Annalen der Chemie. 186,2,3.

KARL ETTI: "On Catechin." [The author has reinvestigated this substance, and finds that Hlasiwetz's formula is correct, namely, $C_{19}H_{18}O_8$. He prepares it as follows: Catechu is dissolved in 8 parts of boiling water, the solution immediately strained, and exposed to cold for a few days. This causes the separation of crude catechin, which is almost insoluble in cold water. It is collected on a strainer and afterwards pressed. The cake of impure catechin (which is still accompanied by a good deal of catechu-red) is dissolved in a sufficient quantity of very dilute alcohol, the solution (after settling) filtered, and shaken with ether, as long as it takes up any catechin. The ether being removed, the residue is treated with water, and the solution allowed to stand several days, when most of the catechin separates in colorless crystals. It is once more strained, pressed, and dissolved in boiling water (which leaves quercetin behind), and from this solution it is obtained in small, colorless needles.]

De Farmaceut. Nos. 24–28.

V. D. HARST: "Cinchonidia as a Substitute for Quinia." [Weddell, in a paper read before the Académie des Sciences, at its session of January 22, 1877, states, on the authority of J. El. Howard, that cinchonidia has taken the place, in a large measure, of quinia, in India as well as in Europe, being found to be but little inferior to the dearer alkaloid.]

DR. VITUS BRUINSMA, in a series of very able articles, attacks the trade in nostrums and secret remedies, which has gradually sprung up in Holland, and shows up some of the curious underground ways of this illegitimate commerce.

C. G. WITTSTEIN: "On Caustic containing Lead." [The author states having met with samples of fused silver nitrate, containing 4.4 per cent. of lead nitrate, an impurity which has not been found or publicly noticed for nearly thirty years.]

ORIGINAL COMMUNICATIONS.

SODA-WATER APPARATUS.

PRACTICAL HINTS CONCERNING ITS SELECTION AND MANAGEMENT, AND SUGGESTIONS AS TO THE BEST METHODS OF MAKING AND DISPENSING CARBONATED BEVERAGES.

ONE hundred and ten years ago, the celebrated Dr. Joseph Priestley, while living at Leeds, England, amused himself with experimenting in a neighboring brewery upon the carbonic acid (or "fixed air," as it was then called), which he found resting in a thick layer upon the fermenting mass in the brewer's vat. Dr. Wm. Brownrigg, some time before, had advanced the novel theory that the sparkling appearance of Pyrmont water was due to the presence of "fixed air" therein. To test this Priestley took two small vessels partly filled with pure water, held them below the surface of the stratum of "fixed air," and poured the contents briskly back and forth from one dish to the other. After some minutes of this exercise, he was delighted to find that the liquid had acquired the sparkling appearance and brisk taste characteristic of the Pyrmont spring! And thus it was, in the very citadel, so to speak, of a rival beverage, that the eminent discoverer of oxygen made and drank the first glass of pure soda-water ever manufactured.

Nevertheless, although Priestley lost no opportunity to urge the utilization of the "fixed air" generated in breweries and distilleries, but little heed was paid to him, and the real business of making carbonated waters took its rise some years later, and, curiously enough, in Sweden. Prof. Torbern Bergman, one of the greatest of chemists, suffered, in 1770, from a painful disease, which was much alleviated by the use of mineral waters obtained from Germany. The impossibility of getting these in the early spring led Bergman first to analyze and then to compound them, which he did with remarkable success. His process consisted in generating carbonic (or, as he called it, "aerial") acid, impregnating water therewith, and then adding various mineral ingredients, according to the particular spring he desired to imitate. He devised simple and efficient apparatuses for generating carbonic acid from chalk and vitriolic acid, and the use of them became so popular, even in the most distant Swedish provinces, that women, as well as men, practised aeration with wonderful dexterity.

Bergman's methods were transplanted to Geneva, and thence to Paris, and practised there on a large scale, and with various improvements, before the end of the century. Somewhat later the business began to spread in Great Britain, the first patent for impregnating water with gas having been granted in 1807, to Henry Thompson, merchant, of Tottenham, Middlesex. About the same time the subject commenced to attract attention in the United States, and in 1810 a patent was taken out by Simmons & Rundell, of Charleston, S. C., for saturating water with "fixed air." Since then an enormous amount of capital has been embarked in the business, and the talents of inventors have been ceaselessly exerted to perfect in every detail the apparatus requisite for making and dispensing carbonated beverages, the chief of which is still popularly known by the accidental and inappropriate name of "soda-water," fastened upon it by an obscure manufacturer, who either derived his gas from bicarbonate of soda, or thought to improve the acidulated liquid by adding a little soda to it. A single American firm, engaged for two generations in making soda-water apparatus, has taken out over one hundred patents, employs a capital of a million dollars and a force of over three hundred workmen, conducts thirty-eight distinct trades in its factory, sends its products to every quarter of the globe, and has sold over twenty thousand apparatuses.

At least three-fourths of these, besides thousands made by other manufacturers, have gone into the hands of the druggists of the United States and Canada, and the manufacture and sale of soda-water forms an increasingly important part of their business in the warm season. A fine apparatus is a good sign of taste and enterprise, and in favorable localities the profits from this source during the three summer months may be relied on to pay the whole year's rent. In view of the amount of capital invested by druggists in this direction, some practical hints as to the choice and management of apparatus and the general conduct of the business, derived from men of the widest experience, may prove both timely and valuable.

As in cooking a hare you must first catch the animal, so, to manage a soda-water apparatus, you must first buy one, and this preliminary purchase is by far the most important part of the business. A good apparatus, like a good horse, may cost more at the outset, but it is managed with safety, ease, and cheapness, while a bad apparatus is even worse than a bad horse, for the one may improve with training, but the other inevitably entails annoyance, expense, and positive danger in a constantly increasing degree. In making an investment of this class the buyer should never forget that "a poor article is dear at any price." And he should never fail to bear in mind the importance of buying of a manufacturer of recognized skill and reputation. In no sort of apparatus or machinery are serious defects more likely to occur from the ignorance, carelessness, or trickery of the maker, and in none is it more difficult, even for experts, to discover such imperfections. This fact was strikingly illustrated in the recent experience of a prominent Broadway druggist, who paid a dealer of doubtful standing fifteen hundred dollars for a showy counter apparatus which, after a single season's use, he had to have thoroughly overhauled and repaired by another manufacturer at a cost of three hundred and fifty dollars. In taking it to pieces it was found that the metal faucets of the syrup tanks were set in with red lead, liberally applied, so that the unconscious druggist had actually been dealing out a slow poison to his unsuspecting customers.

A most important part of a complete set of soda-water apparatus is the gas generator. In large cities it is common to buy or hire a dispensing apparatus, and get the soda-water ready-made and delivered in large fountains. The country druggist, however, is generally obliged to make his own soda-water. But this is no disadvantage, as, after the first outlay, it is far cheaper to manufacture the soda-water than to buy it.

The generators in common use are made of copper, iron, or steel. Copper was the material first generally employed, because, while possessing considerable strength, it could be made into the desired form at a moderate cost for labor and material. The objections to it, however, are very serious. It cannot be expected to sustain a pressure of more than three hundred pounds to the square inch, and the heat evolved in the process of generation is slow but sure destruction to it, this metal being weakest when it is warm. At the best a copper generator will not last more than ten years, and it is always increasingly liable to a disastrous explosion. The introduction of the cast-iron generator was a great step in advance. A single generator of iron would cost far more than a copper one; but when the growth of the business warranted manufacturing them by wholesale, it became possible to sell, for one-fifth less than the copper article, an iron generator able to resist a pressure of five hundred pounds, and to do good service for twenty years, the heat evolved in its use being rather strengthening than otherwise. Even iron, however, does not secure absolute safety, which can only be attained by using a metal strong enough to resist the pressure of the entire volume of gas that can be generated from a single charge by adding all the acid at once to the carbonate. Such a metal is found in steel, generators of which are gradually coming into use among intelligent purchasers, just as steel rails are being introduced on the best managed railroads. Steel generators will resist a pressure of one thousand pounds to the square inch, and will last a hundred years. They cost about one-fourth more than copper, and a little over one-half more than iron generators. They are really by far the cheapest in the long run, espe-

cially as they can be sold, after years of use, for nearly as much as they cost, where an iron generator would bring no more than half of the original price, and a copper one would be worth almost nothing, except as old metal. As to safety, you must keep both eyes wide open in using a copper generator; with an iron one you may shut one eye if you choose; and with a steel one you may sleep as sound as you like. This was well shown in the case of a Philadelphia house who bought a copper generator, which, after being used only twice, was found to have increased two inches in diameter. In much alarm they hastened to buy a steel generator, and breathed freely once more on finding, by actual test, that raising the pressure to seven hundred and fifty pounds (as high as it would go) produced not the slightest injurious effect.

If steel generators were exclusively used, this branch of the subject might be dropped here. It is a fact, however, not only that great numbers of iron ones are employed, but that more than one-third of the generators in use in this country to-day are made of copper; and, strangest of all, there is still a demand for new ones of the same metal, although they are more expensive than iron, and in every way less desirable, except that the lightness of the copper involves some saving in freight when the apparatus is to be shipped a long distance. This, however, is a trifling matter, and if the purchasing public understood the subject rightly, not another copper generator would be sold. It is not to be supposed that, after this explanation, any reader of NEW REMEDIES will squander money on a copper generator, but for the benefit of those who may have such generators on hand, or who may be using iron ones, we will point out the dangers to be avoided.

Especially must untiring care be exercised in using old copper generators, as with these at least nine-tenths of the accidents occur. The metal being inherently weak, the constant danger is that the gas may be generated so rapidly, or drawn off so slowly, as to increase the pressure beyond the generator's power of resistance. It is taken for granted that the operator knows enough to remove the old charge, to rinse the generator thoroughly with clean water, to wipe the nuts and screws of the acid and carbonate "bungs" with a clean cloth, and grease them moderately with tallow (not oil), and then to place the proper amount of carbonate and water in the receiver. Always use a lead funnel with a sheet-lead strainer in putting in the acid, and carefully avoid spilling it on the generator, as it will corrode the metal. The strainer is to keep out any sulphur, glass from the carboy, or other hard particles which might cause the acid valve to leak. After turning on the acid always close the valve firmly, but not rudely. This valve is the weak point of the machine, and must be carefully treated and closely watched. Test it every now and then by pouring in water when the generator is empty, and then closing the valve and listening at the bunghole to see if you can detect a dripping. If you can, or if, after turning off the acid at any time, you see from the gauge that the pressure continues steadily to increase, you may be sure there is a leak requiring immediate attention. In such a case, of course, the valve must be carefully repaired or replaced by a new one. Another danger is that, though the valve may not leak, the packing may become worn, letting the rod slip so easily that the pressure of the gas may raise it, thus prematurely admitting fresh acid with the most serious results. To prevent this every generator should have a cam-lock shutting down over the lever of the acid valve.

A leak, or a loose rod, or sheer carelessness in not shutting off the acid, may serve to generate a dangerous amount of gas. To guard against this risk either a safety-valve or a safety-cap is generally employed. To avoid corrosion from the acid the safety-valve must be placed on the gas washer, at such a distance from the generator that the connecting-pipe may be choked and the mischief done before the valve can act, and even without any warning from the pressure gauge, which is also placed at or near the gas washer. The valve may work too easily, or may leak, permitting a wasteful escape of gas, or it may stick and fail just when it is most needed. A much better device is the safety-cap, which is attached directly to the generator, is provided with openings, and contains a small disk. This disk bursts at a certain pressure, allowing the gas to escape through the openings in the cap. The disadvantage of this is that it involves the loss of the charge in the generator, and the expenditure of a few cents for a new disk. But, on the other hand, it insures positive safety, making it absolutely impossible for the generator itself to burst.

A Harlem druggist, while quietly putting up a prescription one day last summer, heard something snap in the basement, and, on going to reconnoitre, found his boy fast asleep, and the gas pouring out through the vents in the over-charged generator. But for that cap the daily newspapers might have had to record "a destructive explosion," and we do not hesitate to say that no copper or iron generator—copper especially—should be run a single day without a safety-cap and a lock on the valve handle.

A word should be said here against the practice of putting a faucet valve in the pipe connecting the generator and gas washer. This is done so that the operator can add to the charge of carbonate without wasting the gas in the washer; but the gain is slight, and, sooner or later, this valve is sure to be left closed, the gauge on the washer can give no warning, and (except with a steel generator) a speedy explosion is inevitable. Reputable manufacturers positively refuse to put in such faucet valves, and, where they have been put in, no time should be lost in taking them out. In the best machines the washer is placed on a higher level than the generator, so that the water in it flows through and cleans the connecting-pipe when the generator is emptied. When this is not the case, the pipe should be specially large, and should be occasionally removed and cleaned.

Supposing this pipe to be all right, the acid valve to be in perfect order, and the acid to be added to the carbonate in proper quantities, there is still an ample field for skill and caution in drawing off the gas. If you wish to charge your fountains at a certain pressure, say one hundred and fifty pounds, wait till the gauge indicates that pressure or a little more, and then gradually turn the charging-pipe valve. Keep your eye on the gauge, and, by adding more acid or diminishing the flow of gas, keep the pressure as nearly as possible at the original point. *Under no circumstances should the pressure vary more than twenty pounds during the process of charging the fountains.* This is a point of great importance, and one greatly neglected, some operators being careless enough to allow the pressure to run up to two hundred and fifty, and then down with a rush as low as sixty. Such extremes not only strain and weaken the generator, but serve to choke the pipes and seriously injure the quality of the carbonated water. The reason of this is very simple: The sudden relaxation of pressure in the generator causes the mixture contained in it to boil up, so as not only to invade the acid chamber, but also to rush into the gas washer, and even into the fountain, thus, of course, causing great inconvenience, and, in extreme cases, completely spoiling the water which is being charged. The connecting-pipe has even been sometimes so suddenly and entirely choked up in this way as to cause an explosion.

To secure thorough carbonation with perfectly pure gas, it should not only be equably drawn off, as above stated, but it is an excellent plan to place some fragments of marble in the water contained in the acid washer. These absorb whatever sulphuric acid may have escaped from the generator, thus evolving more carbonic acid; whereas, if only water is contained in the washer, it will certainly take up more of the carbonic acid, which will thus be wasted, and it may permit the passage of some traces of sulphuric acid to contaminate the water which is being charged. The pieces of marble also insure a more thorough washing and cooling merely by the mechanical effect of compelling a much slower and more meandering movement of the gas than when the common dip-pipe is used.

During the intervals when the generator is not in active use it should be kept filled with water, in order to dilute and remove any acid that might otherwise adhere to it with injurious effect. At the coming on of winter, however, the water should always be drawn off, unless the climate is so

warm that there is no chance of freezing. This point should not be neglected, for, even if the generator is not actually burst by such freezing, it is very apt to be so strained and weakened as to explode when put in use again, though there may be no perceptible sign of injury from frost. Common generators, especially copper ones, should always be tested at the opening of the season, by hydraulic pressure, up to a point twice as high as that at which they are commonly used; above all should this be done if water has by any accident been left in them during the winter. It is advisable also, particularly if the generator is old and in constant use, to have it tested two or three times during the summer.

The weak point in all these gas generators, as we have said, is the acid valve, and the main difficulty in their management lies in regulating properly the flow of the acid upon the carbonate. This trouble is largely obviated by the very simple device of placing the acid in the lower receiver, and the powdered carbonate in the upper one. An improved generator is now manufactured on this principle, the two chambers being divided by a thin metal diaphragm, pierced with four narrow slits which are closed or opened by moving a simple four-winged valve, and through these, when opened, the carbonate sifts upon the acid. Such a valve cannot leak, cannot be forced open by the pressure of the gas, and it is, moreover, entirely removed from the corrosive action of the acid, which is confined to the lower portion of the apparatus. The carbonate settles into the acid as it falls, and the elements are thus sufficiently mixed by the mere force of gravity. This improved generator costs rather less than the old style, and presents advantages enough to warrant commending it to the attention of purchasers who desire the best.

Supposing, whatever sort of apparatus may have been used, that the gas is now safely generated and thoroughly purified; the next question of importance relates to the receptacles, or fountains as they are technically styled, in which the water is actually to be carbonated and afterwards contained until it is dispensed to the consumer. It is no exaggeration to say that in the druggist's choice of fountains lies the great secret of the growth and success, or decrease and failure, of his business as a seller of soda-water. The stoutest of steel generators and the handsomest of counter apparatuses will be of no permanent avail if the fountains are not what they should be, and a man may coin money with a copper shell and a single draught column if he has a good fountain. This is strong language, but it is fully warranted by the facts, as we shall now proceed to show.

(To be continued in July Number.)

COMMERCIAL DRUGS OF THE CHINESE PROVINCE OF KUANG-TUNG (CANTON).

BY DR. F. HIRTH DU FRENES, OF AMOY, CHINA.

.....GINGER grows in nearly all parts of the province of Kuang-tung. According to Chinese sources the district Nan'-hai, which belongs to the city of Canton, produces greater quantities and a better quality than the other neighboring districts. The independent tribe of the Miao-tsu, in the mountains at the north-western border of the same province, are also said to produce large quantities of ginger. In the district of Hsin-hsing—about 30 miles south of the city Chao-ching, on the Western River—three-tenths of the flat land and seven-tenths of the cultivated soil in the hills are planted with ginger. A distinction is made between flat-land ginger (in the Canton dialect tin-keung), which is generally soft and tender, and mountain ginger (shan-keung), which is brittle and very pungent. For home consumption the Chinese pickle it in vinegar; the more expensive syrup-ginger (t'ong-keung) is almost exclusively consumed by foreigners or exported.

A less important, but interesting drug is *galgant* root, which has its original home, and even now, almost exclusive growth in the province of Kuang-tung. European druggists distinguish two varieties: radix galangæ majoris, the greater galgant; and radix galangæ minoris, the lesser or true galgant. The latter is the Chinese drug. The dried root, which is sold by the grower at the rate of about $1.50 per picul (=133⅓ lbs.), and which may be purchased at present in the new treaty-port Hai-k'on upon Hainan, for $1.60 per picul, is brought by junks to Hongkong and Canton, where its price ranges at about 3 or 4 dollars, and whence it is exported to Hamburg or to the United States. Russia also consumes considerable quantities of galgant, which is said to be mostly carried over Hankow; it is there chiefly used to impart a characteristic aroma to a favorite liquor, called Nastoika, and is a favorite spice and medicine among the Livonians and Esthonians.

Another product occurring upon the Canton market is *Curcuma* or turmeric, which is the root of various species of Curcuma growing in the immediate vicinity of Canton, chiefly in the district Tan yü, to which the eastern half of the city of Canton belongs. A great deal of it reaches the market already in the form of powder.

Much confusion has been caused by the application of the term *China-root* (Radix Chinæ) to various entirely different drugs. In reality this name is applied to two products only, which have only a distant resemblance to each other. The true China-root, which is understood by this name in European pharmacy, grows in the neighborhood of Canton. In the Chinese herbal, Pên-tsao, it is described under the name tu-fu-ling, while the false China-root, which grows in the province of Sze-chuen, and is brought to market at Hankow on the Yang-tse, is called in the same work by the similarly sounding name fu-ling; and it is not impossible that this resemblance in Chinese names has been the cause of the confusion.* Dr. H. F. Hance, who examined one of the plants from which the true root is derived, declared it to be *Smilax glabra* Roxb. It is said to be found all over the province Kuang-tung. The description of China-root, which is found in Dr. S. Wells Williams' "Commercial Guide," refers only to the China-root of the North (a species of fungus, *Pachyma Cocos*), which forms indeed a considerable article of trade, but is scarcely ever exported further than to the Chinese colonies in Southern China and in the Malay Archipelago. On the other hand, the China-root of the South—which is the only one in demand for the European market, although it fetches a much lower price—is exported from Canton either direct or by way of Hongkong to Europe, the United States, or to the East Indies.

Canton is also a chief market for various industrial oils, principally *pea-nut oil* from *Arachis hypogaea*. This plant is of great agricultural importance in Southern China, particularly in the four western departments of the province of Kuang-tung.† The oil obtained from the nuts is carried upon junks belonging to a great commercial native corporation, first to Ch'en-tsun, a river-harbor close by Canton, whence it is distributed to the interior by means of a highly-ramified system of canals. Of the various grades of the oil produced in the neighborhood of Canton, that from Tsung-hua, about 20 miles north of Canton, is considered the best. The trade in other oils is insignificant in comparison to that just mentioned; nevertheless, a few deserve mention. *Tea-oil*, obtained from the seed-kernels of *Camellia oleifera* (Chin. ch'a-shu, *i.e.*, tea-tree), is mostly produced in the northern districts of the province, namely, in Nan-hsiung, Shao-chou, Lien-chou and Lien-shan. In Kuang-chou fu, in the Department "Kanton," and in Chao-ch'ing fu a sweetish aromatic oil is obtained from various sorts of cabbage, which is known in the market as *cabbage-oil* (tsai-yu). All these oils, when purified, are used by the Chinese for culinary purposes, while the inferior sorts are utilized for burning in lamps. Other oils are produced from *sesame*, from the Chinese *olive* (a species of *Canarium*, the fruit of which has only a slight resemblance to the European olive), and from yellow and white *beans*. *Wood-oil* is obtained from the seeds of the wu-t'ung tree (*Dryandra cordata* Thunb.,‡ which has its home in the north of the province of Nan-hsiung and Shao-chou fu.

The woods of Hainan are rich in aromatic woods, the

* On China-root see *Pharmacographia*, p. 648.

† These are called the "lower 4 Fu," "hsia-ssu-fu," namely, Chiung-chou (Hainan) Lei-chou (the peninsula), Lien-chou and Kao-chu.

‡ This is different from gurjun or wood-oil, obtained from various species of *Dipterocarpus*. See NEW REM., v., 201.

botanic origin of some of which is still enveloped in doubt. The most important are *eagle-wood* (lignum aloës) and *rose-wood*, the chief depot for export being Ai-chou at the south-coast. The principal commercial articles of Pei-hai (Pak-hoi) are sugar, oil, and indigo, the best quality of which latter is produced near Pei-lin (Pak-loa), about 60 miles north of Pei-hei. Next may be mentioned: China-root, galls, incense, myrrh, wood-oil, assafœtida and *star-anise*. Of the latter between 1,000 and 2,500 piculs are brought to market annually at Macao and Canton. In 1871, at the latter port alone, 2,704 pic. were delivered from Pak-hoi in junks Our pharmacological text-books usually attribute the production of star-anise to Japan, the Philippine Islands and to the Chinese province Fu-chien, while it is now well known that the border districts of An-nam, Kuang-tung and Kuang-hsi are its real home.

(To be continued.)

BROMHYDRIC ACID.

To the Editor of New Remedies.

Dear Sir:—I write the following as an explanation in answer to your correspondent J. W. J., of Ann Arbor, Mich., who asks in May No. of New Remedies how druggists are to know what strength of bromhydric acid is intended in prescriptions unless specified. It is well known that this drug has only recently been added to the list of therapeutical agents, and that its author (Dr. Wade, of this place), also proposed the formula for its preparation, and adopted from the first the standard of ten grains of bromine to the fluid drachm. Unfortunately, the formula given by Dr. Fothergill, of London, England, after having referred to the original article in *Peninsular Journal of Medicine* (Detroit), by Dr. Wade, gives a preparation considerably weaker than that first proposed; but it is probable that this was unintentional on the part of Dr. F., as he intrusted the whole matter of its preparation to the hospital pharmacist, and has said nothing in regard to lowering the standard. Now, the average dose of bromhydric acid of the strength of ten grs. of bromine to the drachm is half a drachm for an adult, and it is altogether likely that whoever prescribes it, does so, having only in view the preparation above described. If this formula should be adopted as officinal, the result would be "dilute bromhydric acid." Supposing it to not be here out of place, I append the working formula for its production:

℞ Bromide of potassium..... 120 grs.
Crystallized tartaric acid..... 153 grs.
Water..... 1 fl. ℥.

Dissolve the bromide in the water, and then the acid. Place in cold water 12 hours for precipitation and decant. Large quantities may be made, as it keeps well. I usually prepare 40 ozs. at a time.

As prepared from above formula its specific gravity at 60° is 1.228. It can be afforded at wholesale at 60 cents per pound.

I claim to have prepared (under Dr. Wade's supervision) the first ounce of ac. bromhydric, and since have prepared many gallons. Dr. Wade uses it quite extensively in his practice, and with almost unfailing results.

Resp'y, Howard M. Church,
Druggist.

Holly, Mich., May 29th, 1877.

MALT EXTRACT.

To the Editor of New Remedies.

Dear Sir:—May I call attention through your pages to the great difference which exists between the malt extracts of different manufactures?

Some years ago, when Hoff's malt extract was brought prominently before the profession in this city, I made a considerable trial of it, and in *some* cases, I must admit, with good results; but the fact that I have almost ceased to use it, will, perhaps, convey my opinion of its merits as well as anything more which I could say.

Recently I have had occasion to use and compare the results from the use of other so-called malt extracts, and this not only in a general practice, but more particularly in that of a dispensary, where the patients were directly under my observation, and I was able to note carefully the effects produced. I have been struck by the remarkable difference in the value of these agents. I have found an invaluable aid in the treatment of many cases, such as anæmia, some forms of tubercular disease, and more especially in marasmus and kindred forms of children's diseases, in one of these preparations.

While not wishing to be considered as a simple advertiser of any particular preparation, I feel justified in calling attention to Link's malt extract for the following reasons:

1. I have no pecuniary interest in its manufacture (which I believe is not in this country).

2. It is as distinct in its effects from other malt extracts (at least some of them) as if an entirely dissimilar substance, and I feel as if conferring a favor on those of my professional brethren who have been disappointed in the use of others, by calling their attention to this preparation; and,

3. I believe that it will be found a valuable addition to our list of remedies, and that the lives of many children may be saved by its use during the hot season, already upon us.

Respectfully,
Lemuel J. Deal, M.D.,
Professor of Chemistry, Penn. College of Pharm.
No. 148 E. Huntingdon Street, Philadelphia.

[That considerable variations exist in the therapeutic value of different preparations of malt extract, there can be but little doubt, since most of its virtue depends upon the presence of diastase—a principle easily destroyed by improper management during the process of manufacture. In addition to the preparation so highly recommended by Professor Deal (concerning the excellence of which we have other testimonials), those of Toussaint, of this city, Loeflund, of Stuttgart, and the Trommer Extract of Malt Co. of Fremont, Ohio, leave little to be desired in the way of a choice.—Ed. N. R.]

MISCELLANEOUS CONTRIBUTIONS FROM THE ORIENT.

By Prof. Xav. Landerer, Athens, Greece.

(Continued from p. 116.)

A New Antiepileptic.—An intimate friend of mine, who has been subject for years to epileptic fits, and had exhausted the catalogue of staple remedies, placed himself in the hands of a priest, who had formerly been a herbalist (ῥιζοτόμος), and claims to have discovered a plant, which removes, or at least alleviates the evil. He collects it in the Kephissos Valley. By accident I obtained a sight of the root, branch, and one leaf of the plant, and do not hesitate to pronounce it as *Clematis cirrhosa* or *sylvestris*. Two previous cases of epilepsy were treated by a decoction of the root of this plant, and the result was a postponement of the attacks for over three months, perhaps for longer, or altogether, as time will show. This decoction is also strongly diuretic; and the bruised fresh leaves act as a rubefacient, and sometimes even as a vesicant when applied to tender parts of the skin. The name κληματὶς is derived from κλῆμα, *vine*.

Sophistication of Wines.—No person in Greece, where grapes are often a drug in the market, would think of making artificial wine. The price of the best grapes is only about 10 leptas*); that of a botza of grape-juice is 20–30 leptas. In the richest wine districts, as in Morea, in Eubœa, and upon the Daimonisi Islands (N. O. of Chilidromi), the must (μοῦστος) is often given away to poor families, owing to a lack of barrels, or it is inspissated to a sort of root. This is used for preparing a peculiar delicacy, by dipping into it strings of nuts and almonds until a sufficiently thick layer has been deposited upon them, after which it is covered with powdered sugar and flour, and packed away. These sausage-like sweetmeats are called soutsukia or moustopyta (μουστόπηττα). The residues left after obtaining the grape-juice are bought up by agents for

* 100 lepta = 17 cents = 1 drachma (of 1833).—1 botza (μπότζα) or flask holds 2 okkas or 2½ kilos of wine. Wine is usually sold by weight: 1 bareli = 24 botzas = 50 okkas. By measure this would be equivalent to about 64 litres.—Ed. N. R.

very low prices, and are exported to Trieste or Venice in immense quantities. They furnish the bases of artificial wines. Although "no admittance" is the strict rule in these factories, I have been lucky enough to be an eye-witness of the operations. The grape-husks are boiled by steam in wooden vats, the saccharine colored liquid is drawn off, and by addition of yeast fermentation is induced. They are then filtered and "colored" by means of "wine-coloring," colore di vino. For this purpose the flowers of *Malva arborea* are imported from Sicily; they have, when dry, a blackish, or rather deep bluish-red color, and readily yield their coloring matter to alcohol. A proper quantity of this tincture is then added to the "wine," to give it the tint of French red wines, and the resulting product is sold as *Petit Vin de Bourgogne*. Nevertheless, the beverage is harmless and the grape-husks are an important article of export from Greece.

Extractum Ferri Uvicum.—In countries like Greece, where the proper kind of apples for preparing Extractum Ferri Pomatum cannot be obtained, a very serviceable preparation may be made by dissolving freshly precipitated oxide of iron (from ferrous sulphate), in the juice of white grapes, filtering and evaporating to a thick extract.

An Ancient Silver-Vessel.—In 1837, during the presence of Ludwig I. of Bavaria, an ancient tomb was opened at Athens, in the neighborhood of the old Chamber of Deputies. A large number of people, the court, myself, and some friends were present, and witnessed the opening of the sarcophagus. It contained a female skeleton, and among a lot of trinkets there was found a drinking-cup of milk-white color. This was removed and handed around for inspection, but it rapidly became gray, and finally nearly black. Being requested to examine the matter, I found, on cutting through the edge of the cup, that the interior had preserved its metallic condition of pure silver, but the exterior had become converted into chloride, probably by infiltration of sea-water, and hence the sudden change in color, on exposing it to light.

(To be continued.)

TRADE NOTES.

Dialyzed Iron.

DUBRUNFAUT, Graham, and others, showed that by floating upon distilled water a vessel closed at its lower part by a membrane, and containing an intimate mixture of various substances, these will soon divide themselves into two distinct parts. The ones, called *Crystalloids*, pass through the membrane, as do also most of the crystallizable substances, and mix with the distilled water. The others, which received the name of *Colloids*, and of which albumen may be considered as a type, remain wholly in the apparatus.

This *dialysis*, or separation, takes place with such nicety, and such precision, that this method has been employed in medico-legal investigations to isolate poisons which chemical processes would have destroyed or left in the mixtures which were to be analyzed.

If certain salts of iron in solution are introduced into the dialyzing apparatus, and the latter is floated upon distilled water, most of the acid is soon found to pass through the membrane and into the distilled water. There remains in the apparatus mainly a solution of a peroxide of iron better freed of its acid than any chemical reaction could do.

When properly made, the solubility of dialyzed iron in distilled water is very remarkable, and this degree of solubility is unaffected by nitric, acetic, or muriatic acids, but traces even of organic matter, sulphuric acid, alkalies, some salts, and boiling cause a coagulum to form resembling a blood-clot, which is insoluble in water, but soluble in dilute acids. Neither alcohol nor sugar effect a change in the form of the solution, and their use renders it possible to prepare elegant alcoholic solutions and a syrup.

Most valuable features of iron prepared by this method are the absence of any styptic taste, and the freedom from tendency to produce disturbances of digestion or of the nervous system, it is moreover almost tasteless, and is free from tendency to blacken the teeth, qualities not possessed by most ferruginous preparations.

A very valuable use to which it may be put is as an antidote to arsenic, for which purpose it is recommended to replace the hydrated sesquioxide, on account of its convenience of administration, and the fact that it requires no previous preparation.

We have recently had sent to us two preparations of dialyzed iron—one by Lebaigue, of Paris, for whom Messrs. E. Fougera & Co., of North William street in this city, are the General Agents for the U. S., and the other from the well-known house John Wyeth & Bro., of Philadelphia.

The former is a beautiful reddish brown solution, containing about 7½ grains of the dialyzed oxide to each teaspoonful of the solution, the dose being one to four teaspoonfuls with each meal. An elixir of dialyzed iron is also made by the same house, which is an agreeable preparation. What we have said of the above will apply in every sense to the preparation offered by John Wyeth & Brother, with the difference that, being more concentrated, the dose is smaller, and the price is also (so we understand) somewhat less. Accompanying the bottle containing the latter solution is a fresh cork to replace the one injured by opening it, and a medicine dropper (rubber-capped pipette) for measuring the dose. Thirty to fifty drops are recommended to be taken daily, in five doses.

Mathey-Caylus Gluten Capsules.

ANOTHER of the foreign specialties (for which the house of E. Fougera & Co. are distinguished) is the line of Mathey-Caylus Gluten Capsules. The list includes twenty-two varieties and embraces combinations of copaiba, cubebs, rhatany, citrate, carbonate, and tannate of iron, cubebs, alum, magnesia, catechin, subnitrate of bismuth, tannic acid, sandalwood oil, tar, turpentine, etc. These capsules are highly recommended by French authorities, and will no doubt meet with an appreciative market in this country.

Sulphate of Chinoidine.

WE have received from Mr. A. Früh, of Greenville, New Jersey, a sample of chinoidine sulphate, which appears to be a most excellent and cheap substitute for the expensive quinia and other cinchona alkaloids. Chinoidine is well known to be only in so far different from the cinchona alkaloids, as it represents the latter in an uncrystallizable condition, while in therapeutic value it is just as effective as a mixture of the alkaloids. Its principal constituent is amorphous quinia (50–60%) and the only valid objection to its use would be its insolubility and the difficulty of making it into hard pills, which do not flatten out in a warm temperature. These objections are overcome by preparing a citrate of chinoidine which is entirely soluble in water, and with the aid of a little gum, etc., can be made into a good and permanent pill. The sample which we have received contains 66⅔% chinoidine and 33⅓% citric acid, and is prepared by simple solution, filtration, and evaporation, producing a buff or light coffee-colored powder, having all the characteristics of an active preparation of cinchona. The trials, to which it has been subjected by physicians in this city, were quite satisfactory.

Allan's Soluble Medicated Bougies.

FOLLOWING the suggestion of Dr. Reynal, of Paris, who has so successfully introduced the use of medicated bougies in the treatment of catarrhal and inflammatory affections of the urethra, J. G. Allan & Co., of Buffalo, N. Y., offer for sale two varieties of these convenient as well as valuable means for treating gonorrhœa and gleet in the male. They are wrapped in tin-foil and packed in cotton in pasteboard

boxes. Each package contains a sufficient number for the treatment of an ordinary case, and retails at $1.50. They offer $500 for any case they cannot cure.

The patent granted the manufacturers on the 17th of October, 1876, is for a flexible urethral bougie, medicated or not, composed of gum arabic or tragacanth, glycerate of starch and cocoa butter, fusible at the temperature of the body, and coated with glue or gelatine, medicated or not. But as we are not informed of the nature of the other ingredients, we do not feel at liberty to recommend them. We can, however, certainly compliment the attractive manner in which they have been put up for sale and use.

The Zero Refrigerator.

THIS is undoubtedly one of the best preservers of food and ice which can be had, and is an almost indispensable portion of the outfit of a drug-store located in a warm climate. With it, syrups and extracts, cream, mineral waters, decoctions, suppositories, ointments, and plasters can be maintained in a condition fit for dispensing in spite of "the nineties," and with the least possible expenditure of ice and trouble. For family use they are rapidly becoming the favorite, being adapted in design to a variety of needs, and constructed with such materials and care that they perform their function with certainty and endurance. The testimonials to the value of these refrigerators would fill a good-sized pamphlet, and their possessors already comprise many thousands.

Food for Infants.

WE are reaching the season of the year when digestive disturbances among infants are the principal causes of mortality, and demand a large proportion of professional care. We therefore ask the attention of our subscribers to some of the valuable preparations advertised on other pages, which are calculated to furnish nourishing food for artificially-fed infants, without subjecting their imperfectly-developed organs to the burden of digesting foods appropriate only for children of maturer years.

The "Baby's Cereal Food," manufactured by Jewell Bros., No. 2 Fulton street, Brooklyn, has been in use for a number of years, and is endorsed by some of the best authorities to be had in that city, both as regards the care which is taken in its manufacture and its value when subjected to the test of practical use.

The letters of Drs. J. H. Hobart Burge, W. S. Searle, and Jerome Walker are unqualified in its praise, as are also those of Professor Dunster and Dr. Joseph Wooster, of this city. Dr. Bell, of the *Sanitarian*, and Prof. Horsford, are also among its supporters. It is put up in attractive packages, carefully sealed, and in composition is said to consist of the best wheat, from which the branny coat has been removed and much of the starch extracted. It has been thoroughly cooked in the manufactory, and requires only a few minutes' boiling to render it fit for use.

Neave's Food for Infants and Invalids has already achieved for itself, both in England, where it is made, and in this country, where it has long been in the market, a reputation which is a sufficient guaranty of its excellence. It is said to be rich in albuminoids and phosphates, and the starch, which is the chief source of trouble in foods given to infants, has undergone such change as to render it easy of digestion by them. "Neave's Food" is put up in metallic packages, and is sold by J. O. Nixon, of Brooklyn, who is the agent for this country.

Whitman's Instantaneous Chocolate.

STEPHEN F. WHITMAN & SON, the Philadelphia confectioners, whose wares are so widely known for their excellence, have recently offered a preparation of chocolate which requires only to be added to boiling milk or water, in the proportion of three dessertspoonfuls to each cupful, to give instantly a delicious beverage. It is put up in oval tin boxes, neatly labelled, and in the form of a fine powder, already sweetened and flavored.

For travelling, yachting, camping, and excursions, as well as for the sick-room, it can readily be conceived to be an excellent thing, and for ordinary family needs and the convenience of the dispensers of soda-water, it may be considered quite as valuable.

NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, providing they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue.*]

Scotch Soda. (W. C. F., Cleveland, O.)—We are informed by competent authority, that no such article exists in *this* market as a specific or particular brand. In English trade, however, a distinction is generally made between soda obtained from different localities: Scotch washing soda being often quoted in contradistinction to other brands. The former is merely sal soda or sodium carbonate in crystals prepared in Scotland, after Walker and Cammack's process, by a continuous process in revolving furnaces. The outline of the process is this: Into the revolving furnace is first charged a mixture of sodium sulphate and coal, with a quantity of calcium carbonate barely in excess of the chemical equivalent, and the mixture is heated until the reaction is nearly complete. At this stage about 10% of crushed caustic lime is added, and as soon as it is well mixed with the fluxed mass the entire charge is withdrawn. In this way the formation of caustic soda, by means of the caustic lime, is avoided, whilst at the same time the presence of the latter renders the cakes porous, so as to admit of ready lixiviation by water. The solution on evaporation yields the salt.

Indigo-Carmine. (C. V., Chicago, Ill.)—Good indigo is powdered in a mortar as fine as possible (do not buy any powdered indigo), and dried in a capacious porcelain capsule very thoroughly at a temperature not exceeding 110° C. (230° F.). As soon as *all* moisture has been expelled, *fuming or Nordhausen* sulphuric acid is added to the still warm powder, in the proportion of four parts of acid to 1 part of *dry* indigo. The addition of the acid must be performed slowly, under constant stirring with a glass rod. The mass foams up and increases in bulk, wherefore a capacious vessel is required. The whole of the acid having been added, the mass is once more briskly stirred, and allowed to stand, covered, for 24 hours. In the course of this time the coloring-matter of indigo combines with the sulphuric acid, forming indigo-sulphuric or phœnicin-sulphuric acids. These could be at once converted into indigo-carmine, but the product would not be handsome, as the sulphuric acid carbonizes some foreign constituents of the indigo, thereby imparting to the solution a blackish color. In order to remove these, the acid liquid is diluted with 10 or 12 parts of pure water, and the whole is allowed to settle in a tall flask for a few days. The clear solution, which has a magnificent blue color in very thin layers, is evaporated at a *gentle* heat in a large porcelain capsule, and during the evaporation gradually neutralized with potassium carbonate (or sodium carbonate). The liquid now contains in solution indigo-carmine, which is "indigo-blue-sulphate of potassium or sodium." This may be obtained either by further evaporation, or better, by the further addition of soda, when it separates as a doughy mass. It is the above solution, however, which is referred to in our formula for "Black Ink," on page 153 of our May number.

Artificial and Natural Fruit-Essences. (G. S., Rochester, N. Y.)—The best work on this subject which we are acquainted with—besides the files of various chemical, pharmaceutical, and general scientific papers—is *Aug.*

Gaber. Die Liqueur Fabrikation, etc., 8vo, Wien, 1875, which contains formulæ for most of the essences in demand.

Amyl Nitrite and Nitrate. (J. W. F., Topeka, Kansas).—These two substances are *not* identical, although many practitioners and druggists often use the terms synonymously. This confusion should at once be cleared up, since both substances are used medicinally, and appear to have different therapeutic properties. The *amyl nitrite* $C_5H_{11}NO_2$ is a salt of nitrous acid, HNO_2, in which the hydrogen has been replaced by amyl C_5H_{11}; the *amyl nitrate* $C_5H_{11}NO_3$ is similarly formed by the substitution of amyl for the hydrogen of nitric acid, HNO_3. The action of nitric acid on monatomic alcohols, as methylic (wood-naphtha), ethylic (common alcohol), butylic, amylic (fusel oil), produces in general a nitrite, owing to the decomposition of the nitric acid and the oxidation of a part of the alcohol. If, however, a body is present, during the reaction, which can remove or decompose the nitrous acid formed—as, for instance, urea—a nitrate alone is the result. *Amyl nitrate* has general anodyne properties, and is in small doses a most effective remedy for general nervous excitability. *Amyl nitrite*, however, which has been used for a much longer period, acts by causing paralysis and relaxation of involuntary muscle fibres, and for this reason has become extensively employed in asthma, syncope, and similar affections.

Syrupus antiscorbuticus (J. F, M.D., New York).—This is the *Sirop antiscorbutique* or *Sirop de raifort composé* of the French Pharmacopœia. Its formula is as follows: Scurvy-grass, water-cress, horse-radish (root), all fresh, of each 100 parts; buckbean (marsh-trefoil), fresh, 10 parts, bitter orange peel, 20 parts, canella, 5 p., white wine, 400 p., sugar, 500 parts. Bruise the scurvy-grass and water-cress and comminute the other vegetable ingredients; macerate them for 48 hours with the wine, and distil off 100 parts of alcoholic essence. Express and strain the residue from the distillation; clarify the liquid with white of egg, strain; add 300 parts of sugar and make into a syrup of the spec. grav. (while boiling) 1.270. Strain if necessary. With the rest of the sugar and sufficient water, make a very thick syrup; mix this with the other syrup; allow to cool somewhat; then add the aromatic essence and cover the vessel well till cold. The preparation has tonic, aperient, and depurative effects. It is often used in diseases of children, such as scrofula, cachexia, chlorosis, etc.

Portable Stoves for Druggists. (J. S., Winnipeg, Man.)—Small portable stoves or furnaces, such as are required for heating sand- and water-baths, or for directly heating evaporating dishes, flasks, etc., and in which kerosene is burned, are now made in great perfection, and at very low prices. Formerly it has been almost impossible to obtain any that did not smoke, but this trouble has been gotten rid off. Any wholesale dealer in chemical apparatus, or the wholesale drug-house with which you deal, will be able to furnish them. The best are the "Victor Stove," with 2 burners, $6.00; with 3 burners, $7.00; cheaper kinds cost $2.50 and $3.25, from first hands.

C. G. T. (Pa.)—Your inquiry has been in part answered in our March number, on page 91, but from the tenor of your note it seems that you have overlooked it. If you were to ask us to examine some sample of drug which you suspect to be adulterated, or any question the answer to which would render a service to the profession at large, we should do our utmost to satisfy you. But we can under no circumstances undertake or publish analyses of commercial preparations owned by others, which are uninteresting to pharmacists, and are only asked for with a view to private advantage. This, however, does not apply to dangerous or injurious nostrums, the composition of which we shall not hesitate to make public as soon as it becomes known to us.

Lemon Grass Oil. (K. & M., Leavenworth, Kansas.)—This oil, also called Oil of Verbena, is obtained by distillation from the fresh lemon grass herb, *Andropogon citratus* D. C., *Andropogon Schoenanthus* L., a graminaceous plant, native of Arabia, and cultivated in the Levant and in the tropical parts of Asia. The oil of the latter species is more commonly known as *Oil of Geranium*, *Oil of Ginger Grass*, or *Rúsa Oil*. Another species, *Andropogon Nardus* L., which is much cultivated in Ceylon and Singapore, yields *Citronella Oil*. The oil of *A. Schoenanthus*, or Rúsa oil, is used most extensively for the adulteration of oil of rose, not only by dealers, but even by the original producers.

K. (Barnesville, O.)—Your query will be answered fully in our next.

Hydrobromic and Hydriodic Acids. (A. J. S., Oswego, N. Y.)—We do not know of such a process as Meune's for preparing these acids. But we think there is an error in the name, and it should have been Mène's which was given in *Comptes Rend.*, 1849, and in *Silliman's Journal*, xi., 421. This process is as follows:

Six parts of crystallized sodium sulphite are to be moistened with 1 part of water, and 3 parts of bromine or iodine—as the case may be—are to be added, and heat applied. The gases pass over pure, provided the neck of the retort be loosely plugged with asbestos, to intercept bromine and iodine vapors. The sulphite aids the bromine or iodine in the decomposition of the water, the oxygen of which converts the sulphite into the sulphate, while the hydrogen unites with the halogens iodine or bromine to form a hydracid.

The *Journ. f. Prakt. Chem.*, xv., p 1672 (*Pharm. Jour. Trans.*, May 26th) contains an improved method, discovered by Prof. H. Kolbe, for preparing hydriodic acid. It consists in adding to 10 parts of iodine contained in an atmosphere of carbonic acid gas (anhydride), 1 part of phosphorus, little by little and slowly; on the mixture of di- and tri-oxide of phosphorus thus produced, 4 parts of water are poured. On the application of a gentle heat, an abundance of hydriodic acid is generated, which is *not contaminated* with free iodine; while nearly all other processes suffer from the disadvantage of either giving too much water and too little acid, or of contaminating the product with free iodine.

Pulvis Paregoricus. (O. H., N. Y.)—This powder has once been used as a solid substitute for tinctura opii camphorata, and was originally proposed by Vogler. Its composition was: Starch, 80 grs.; mastic, 40 grs.; powdered opium, 2 grs. The dose ranged from 5 to 30 grains.

Elixir of Eucalyptus. (E. M. B., Dayton, Ohio.)—This may be prepared as follows:

Eucalpytus leaves	4 troy oz.
Alcohol, 85 per cent	q. s.
Oil Orange	℥ ij.
Oil Cinnamon (Ceylon)	℥ ss.
Sugar	¾ lb.

Reduce the eucalyptus leaves to a coarse powder, add the oils to 1½ pints of the alcohol, moisten the leaves with a portion of this menstruum, and pack it in a percolating funnel. Pour on the remainder of the alcohol and percolate 1½ pints of tincture, using if necessary an additional quantity of 85 per cent. alcohol. Add the sugar to the mixture and make the product measure 2 pints by adding more alcohol. If alcohol should be objected to, a distilled water may be prepared from eucalyptus leaves, which may be flavored and sweetened as above.

Bleaching of Quills. (O. L., Passaic, N. J.)—Quills may be rendered white and transparent by carefully scraping off the exterior membrane, then immersing them for a few minutes in boiling water and exposing them afterwards to the vapors of chlorine gas, or better, burning sulphur. They must then be well washed and dried very slowly.

Superphosphates. (N. R., Wellington, O.)—Superphosphate of lime is *commercially* a mixture of bones and sulphuric acid rendered dry by various absorbents. The action of sulphuric acid on lime consists mainly in the production of insoluble neutral calcium phosphate, soluble acid calcium phosphate, and insoluble calcium sulphate. The

mixture thus produced is a liquid or doughy mass, which requires to be absorbed by some dry pulverulent substance, in order to be practically useful. For your purposes the following manner of proceeding will be suitable: Upon the floor of a barn, or other convenient place, make a circular wall, about 18 inches high and 5 feet in diameter, of sifted ashes. Into the centre of this place 100 pounds of ground bones, deprived by a sieve of the fine powder; moisten the bones with about 1¼ gallons of water thoroughly, and stir them up frequently during a few hours. Then pour over the mixture, constantly stirring, about 11 pounds of common sulphuric acid. After 24 hours the same amount of water and acid is added in the same manner, and after the lapse of another day the fine bone-flour is added, the ashes composing the wall are thrown over the heap, and the whole left at rest for a week. The heap is then opened out and thoroughly mixed with the ashes, and finally passed through a sieve. If not sufficiently dry for this operation, a further quantity of ashes may be added to it.

NEW PATENTS AND LAWS.

[We will furnish gratis, to subscribers, any information relating to new patents which can be obtained from the Official Gazette of the Patent Office; and for 50c. will give copies of the drawings of such as are illustrated. Electrotypes of the illustrations contained in NEW REMEDIES *will be furnished for 50c. per square inch.*

TRADE-MARKS REGISTERED IN U. S. PATENT OFFICE.

Certificates dated April 3, 1877.

4,514. **Soap.**— R. W. Bell & Co., Buffalo, N. Y. "The pictorial representation of the Centennial Corliss steam-engine."

4,517. **Cosmetic.**—William Hunt, near North East, Md. "The word-symbol 'CONCINNARE.'"

4,520. **Medical Preparation.**—Augustus Kiefer, Indianapolis, Ind. "The word-symbol 'TARAXINE.'"

4,523. **Soap.**—Omer Tousey & Co., Indianapolis, Ind. "The word-symbol 'WRINKLE.'"

4,524. **Refined Petroleum Oil.**—Eliphalet Wickes, Eaglewood, N. J. "The fanciful words 'WICKES ECLECTIC.'"

Certificates dated April 10, 1877.

4,526. **Soap.**—John H. Keller, New Orleans, La. "The word-symbol 'SOAPINA.'"

4,529. **Cleaning Compound.**—Mosury Young & Co., Boston, Mass. "The word-symbol 'SAVOGRAN' and the letter 'S.'"

4,532. **Baking Powder.**—Rhorer Christian & Co., St. Louis, Mo. "The word-symbol 'CHARM.'"

Certificates dated April 17, 1877.

4,541. **Hog Medicines.**—Winchester D. Scott, Philadelphia, Pa. "The representation of a hog."

4,542. **Nursing Bottles.**—Whitall, Tatum & Co., New York, N. Y., and Philadelphia, Pa. "The word-symbol 'PHŒNIX' used in connection with the words 'Nursing Bottle.'"

4,544. **Medical Compound.**—E. J. Burton & Co., Homerville, Ga. "The twig with leaves or berries, and the scroll or band as represented."

4,546. **Soap.**—Henry E. Burger, Brooklyn, E. D., N. Y. "The word-symbol 'COMMON SENSE.'"

4,549. **Illuminating Oil.**—P. J. Fitzgerald & Co., Philadelphia, Pa. "The letters 'E. R. I. O.'"

4,554. **Soap.**—Gowans & Co., Buffalo, N. Y. "The word-symbol 'RAILROAD.'"

Certificates dated April 24, 1877.

4,57?. **Olive Oil.**—Caswell, Hazard & Co., New York, N. Y., and Newport, R. I. "The representation of a hat commonly known as a bishop's mitre, colored gold, black, and white, upon a white ground."

4,574. **Extract of Beef Compounds.**—Charles Delacre, Brussels, Belgium. "The word-symbol 'LA PLATA,' and the representation of a bullock reclining."

4,580. **Medical Preparation.**—Charles H. Phillips, New York, N. Y. "The arbitrarily formed word-symbol 'PHOSPHO-NUTRILINE.'"

4,582. **Soap.**—Schultz & Co., Zanesville, Ohio. "The German word-symbol 'VATERLAND.'"

Certificates dated May 1, 1877.

4,587. **Perfumery.**—George Jaques, Boston, Mass. "The words 'THE RIVAL OF LUBIN'S.'"

4,594. **Medicines.**—J. T. Reed & Co., Boston, Mass. "A pentagonal figure, within which is a triangular figure, and within the triangle is a circle with a horizontal line or band drawn nearly across it. Outside the triangle, inside the pentagon, are the words 'Reed's East India Remedies.'"

4,600. **Remedial Agent.**—Julia Blankman, New York, N. Y. "The word-symbol 'MAGNETIC.'"

4,601. **Soap.**—Andrew T. Crawley, Chelsea, Mass. "The word-symbol 'BURDED.'"

4,607. **Mixed Paints.**—A. H. Holden & Co., Chicago, Ill. "The letters C. E. P. W. in the form of a monogram, and the firm name A. H. Holden & Co."

4,608. **Paints.**—Harrison Brothers & Co., Philadelphia, Pa. "A black surface containing a shield of contrasted color, the latter embodying one or more tints of color."

4,609. **Paints.**—The same. "A polygon being substituted for a shield."

4,611. **Soap.**—Robinson Brothers & Co., Boston, Mass. "The fanciful words 'GOLD DOLLAR.'"

Certificates dated May 8, 1877.

4,619. **Mineral Water known as Vichy.**—Saratoga Vichy Spring Company, Saratoga Springs, N. Y. "A monogram composed of the letters V. S., and the words 'THE SARATOGA.'"

LABELS.

Certificates dated March 6, 1877.

1,022. **"Sapo. A Saponaceous Tooth Elixir."** James King, Jr., New York, N. Y.

1,023. **"Swiss Health-Tea."** John Pfenninger, Alton, Ill.

1,025. **"Dr. Shiloh's System Vitalizer."** Schuyler C. Wells, Leroy, N. Y.

Certificates dated April 10, 1877.

1,027. **"Brain Food."**—John H. Allen and Richard A. Cunningham, New York, N. Y.

1,028. **"Economical Soap."**—Charles F. Kopitzsch & Son, Pottsville, Pa.

1,030. **"The Stock Condition Powder."**—Painter & Calvert, San Francisco, Cal.

1,031. **"Instantaneous Disinfectant and Deodorizer."**—John W. Reay, Brooklyn, N. Y.

1,032. **"Self-Recommending Eye Salve for Diseased Eyes."**—Christian Sander, Brownsville P. O., Ohio.

Certificates dated April 17, 1877.

1,034. **"Eggleston's Lubricating Oil."**—Jesse S. Eggleston, Auburn, N. Y.

1,035. **"Phœnix Nursing Bottle."**—Whitall, Tatum & Co., New York, N. Y.
1,037. **"Horsford's Acid Phosphate."** — Rumford Chemical Works, Providence, R. I.

Certificate dated April 24, 1877.

1,039. **"The Electro-Magnetic Anodyne."**—Nathan Haas, Dayton, Ohio.

Certificates dated May 1, 1877.

1,042. **"Beam's Domestic Medicines."**—Joseph C. Beam, Johnstown, Pa.
1,043. **"Dr. N. Weaver's Concentrated Extract Fireweed, or Scrofula Cure."**—James Lester Belden, Geddes, N. Y.

Certificates dated May 8, 1877.

1,048. **"Chocolated Tablets of Chlorate of Potass."** —George P. Brooks, Boston, Mass.
1,049. **"Asiatic Insect Destroyer."**—James J. Cassidy, Boston, Mass.
1,050. **"Canker Cure Bitters."**—Willard C. Collins, Bucksport, Me.
1,051. **"Ph. Dornbusch's Champagne of Herbs."**—Philip Dornbusch, Nashville, Tenn.
1,053. **"Dr. Ira J. Haskins' What is it? Cures Neura'gia, Catarrh in the Head, etc."**—Ira J. Haskins, Belvidere, Ill.
1,056. **"Wright's Sure Cure for Rheumatism."**—Edward A. Wright, Frederick Nielsen, and Edward Hodges, Pent Water, Mich.

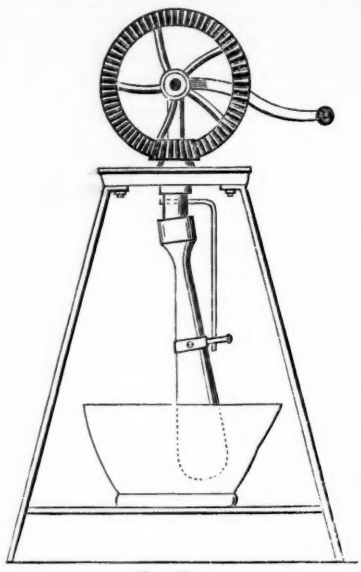
PATENTS.

Patents granted March 13, 1877 (continued).

188,428. **Processes of Extracting Oleo-Margarine from Animal Fats.**—A. Smith, Cincinnati, Ohio, assignor to Amos Smith & Co., same place.
188,429. **Processes of Reducing Animal Fats.**—A. Smith and L. Smith, Cincinnati, Ohio, assignors to Amos Smith & Co., same place.

Patents granted March 20, 1877.

188,594. **Suppository Molds.** — Henry W. Comstock, La Fayette, Ind.
188,606. **Fluters.**—Victor Dorder, Philadelphia, Pa.
188,471. **Grinding and Triturating Apparatus.**—Jos. J. Lancaster, London, Ontario, Canada. The combination of a power-arm adjustably attached to rotating shaft, with mortar and pestle provided with band having projecting slotted bar, whereby the pestle is given a rotatory motion, while at the same time it is allowed extension within the mortar by centrifugal force.



No. 188,471.

Re-issues.

7,559. **Processes of Purifying Paraffine Wax.** — F. H. Byerley, Cleveland, Ohio. Patent No. 132,353, dated October 22, 1872.

Patents granted March 27, 1877.

188,762. **Drawer Pulls.**—L. P. Whiteman, New York, N. Y., and B. M. Gerardin, Jersey City, N. J., assignors to W. D. Whiteman, New York City.
188,766. **Insect-Destroying Compositions.**—E. Bagnicki and A. Groeschel, Jersey City Heights, N. J. A compound consisting of naphtha, benzine, oil of turpentine, oil of hemlock, and alcohol.
188,801. **Apparatus for Manufacturing Hydrated Sulphurous Acid.**—W. Davidson Jones, Hagaman's Mills, N. Y., assignor of one-half his right to H. H. Pawling, same place.
188,822. **Bottle-Washers.**—A. Fisher, New York, N. Y.
188,849. **Bungs for Barrels.**—E. F. Bonaventure, New York, N. Y., assignor of forty per centum of his rights to F. Ochs, same place.
188,901. **Eyeglasses.**—Henry H. Hempler, Washington, D. C.
188,905. **Measuring-Pumps.** — Charles Hilderbrand, Youngstown, Ohio.
188,970. **Bottle-Stoppers.**—D. G. Smith, Carbondale, Pa., assignor of one-half his right to G. B. Smith, Dunmore, Pa. In combination with a stopper for a bottle or fruit-jar, a yoke or bail having spring bars bent at $e^1 e^1$, a stirrup D, and a plate C, notched at *ee*.

188,970.

7,581.

189,007. **Cork-Fastening Bottle-Necks.**—John Young, Amsterdam, N. Y.

Reissued.

7,581. **Bottle-Stoppers.**—D. T. Robinson, Boston, Mass., assignor by mesne assignments to H. W. Putnam, Bennington, Vt. Patent No. 60,424, dated Dec. 11, 1866.

Patents granted April 3, 1877.

189,091. **Paint Compositions** —Sam'l B. Fisher, Pleasant Unity, Pa. [Consists of Rosendale cement, waterglue, linseed-oil, and benzine.]
189,103. **Eyeglasses.**—Ira H. Johannes, Washington, D. C., assignor of one-half his right to R. T. Waters, Baltimore, Md.
189,137. **Apparatus for Cooling Liquids.**—A. D. Puffer, Boston, Mass.
189,231. **Apparatus for Giving Hot-Air and Other Baths.**—T. Kuch, New York, N. Y.
189,234. **Labelling Machines.**—C. Koch and S. L. Solomon, New York, N. Y. [For labelling bottles.]

189,269. **Supplying Beer-Kegs with Bicarbonate of Soda.**—J. J. Schillinger, New York, N. Y. [The bung is made with a chamber containing the chemical, so arranged that when needed, the latter can be pushed into the keg.]

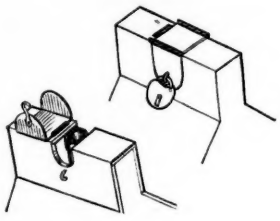
Reissued.

7,587. **Locking-Cases for Stop-Cocks.**—H. C. Meyer & Co., New York, N. Y., assignors of J. H. Morris, executor of E. T. Hall, deceased. Patent No. 89,930, dated May 11, 1869.

189,448. **Stills.**—Thos. Gaff, Aurora, Ind.

189,491. **Packing-Cases for Demijohns, etc.**—George W. Peck, Brooklyn, N. Y.

The shield having a hinge at one side, by which it is united to the top surface of the ridge of the packing-case, and provided with wings, that pass down at each side of the ridge to close the aperture therein.



189,491.

189,504. **Processes for Clarifying Sugar.**—John Schwartz, Pelham Street, Mile End New Town, England.

Cold water or liquor reduced to a temperature of about 32° Fahrenheit, is sprayed upon sugar under treatment in moulds of centrifugal machines, to clarify it without melting the sugar-crystals.

189,511. **Eye-glasses.**—John S. Spencer, New York, N. Y. [Suspending-hook attached to and forming part of eye-glass frame.]

189,538. **Production of Coloring Matters from Aniline.**—Justus Wolff, Wyke, near Bradford, and Ralph Betley, Wigan, England.

1. The production of a dye or series of dyes from aniline, or from toluidine, or from mixtures of the same, and either with or without the employment of xylidine, together with nitro-benzole or nitro-toluol, or mixtures of the same, in conjunction with metallic salts.

2. The production of coloring matters from aniline in conjunction with nitro-benzole, by the employment of hydrochloric acid, or of other suitable hydrogen acids.

3. The productions of coloring matters from aniline, by the employment of arsenic acid, or of other metallic oxygen acids.

4. The production from aniline, partially or completely neutralized or saturated by hydrochloric acid, or by any other suitable acid, and treated in the manner described, of coloring matters soluble in water or in acidulated water, at an elevated temperature, the same being capable of dyeing various shades of black and gray on wool, cotton, and other fabrics.

Patents granted April 10, 1877.

189,345. **Liquid-Measures.**—S. R. Dummer, Jersey City, N. J.

189,356. **Exercising Machines.**—H. F. Hanson and F. O. Buzzell, Bangor, Me.

189,364. **Liquid Filters.**—M. Lansburgh, Baltimore, Md.

189,401. **Petroleum Products** and Methods of Obtaining the same.—Herbert W. C. Tweddle, Pittsburg, Pa.

1. As a new article of manufacture, the petroleum product, consisting in washing the orange-colored resinous oily product obtained toward the close of the distillation of tar residuum, and subsequently driving off the solvent and recovering the heavy oil.

189,539. **Exercising Machines.**—George W. Wood, New York, N. Y., assignor to M. M. Stanfield, and H. W. Wood, same place.

189,541. **Processes and Apparatus for Rendering Fat.**—William E. Andrew, New York, N. Y.

Patents granted April 17, 1877.

189,578. **Apparatus for the Redistillation of Spirits.** P. G. Roony, Cincinnati, Ohio.

189,594. **Syrup and Sugar Filters and Processes of Cleansing the Same.**—W. J. Allen, Buffalo, N. Y.

189,611. **Valve Nozzles for Bottle Stoppers.**—C. Cristadora, New York, N. Y.

189,669. **Bottle Washers.**—E. C. Furbeville, St. Louis, Mo., assignor of one-half his right to Geo. S. Shyrock, same place.

189,691. **Nursing Bottles.**—Julius Briere, Alençon, France.

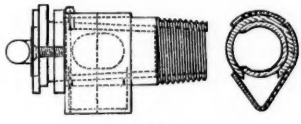
189,699. **Tooth Brushes.**—W. A. Coakley and S. W. Lloyd, Washington, D. C.

189,764. **Flavoring Aerated Beverages.**—John Matthews, New York, N. Y. The process consists in charging the carbonated liquid with the essential oils, and then adding the syrup to sweeten them when bottled or otherwise drawn off.

189,771. **Water Filters.**—C. C. Morgan, Cincinnati, Ohio, assignor to himself, J. Heyl, and V. Heyl, same place.

Patents granted April 24, 1877.

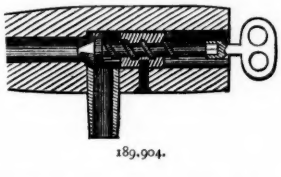
189,839. **Drip Cup for Faucets.**—F. Brigham, Warren, Mass. The combination of the Drip-cup with the revolving spigot.



189,839.

189,860. **Draft Faucets.**—Mat Hogan, Hartford, Conn.

189,904. **Faucets.**—L. A. Rebasz, Lockport, N. Y., assignor to F. C. Lillis, and N. E. Badyle, same place.



189,904.

189,906. **Bottle Stoppers.**—C. Sedgwick, New York, N. Y., assignor to H. W. Putnam, Bennington, Vt. The arms of the bottle stopper yoke are arranged in the eyes of the neck wire, and having the cam-lever pivoted to them below the neck wire.

189,929. **Filter Rack.**—B. Fenner, Westfield, N. Y. A filter rack, consisting of a main part of spiral wire, having suitable devices for being attached to the top and bottom of a funnel.

189,906.

189,929.

189,963. **Tooth-Brushes.**—Sam'l Stevens, Boston, Mass. The central row in the brush is made of Tucum fibre; the outer rows of bristles.

Patents granted May 1, 1877.

190,133. **Spectacles.** I. S. Doten, Bristol Station, Ill.

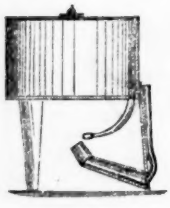
190,149. **Health Lifts.**—A. W. Lozier, Orange, N. J., Assignor by mesne assignments to Mrs. J. de la M. Lozier, New York, N. Y.

190,150. **Health Lifts.**—The same.

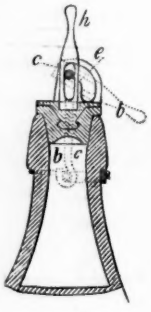
190,151. **Exercising Machines.**—The same.

190,183. **Paint Composition for Roofs.**—A. Blaisdell, Nashua, N. H.

190,241. **Combined Spirit-Lamp and Blow-Pipe.**—S. Needles, Holden, Mo., assignor to I. Nichols and B. F. Metzler, same place. The wick contained in the elbow-pipe is supplied with alcohol from the main cup by the small feed-pipe.



190,241.



190,254.

190,403.

190,244. **Urinals for Invalids.**—Richard H. Olmstead, Naper City, Cal.

190,254. **Bottle-Stopper Fastenings.**—F. Schlich, New York, N. Y. The lever *h* having a slot, and the yoke *c* passing through the slot in the lever, in combination with the bottle-stopper *a*, *b*, bearing *e* and fulcrum projection on the stopper for the end of the lever.

190,262. **Apparatus for Weighing Liquids.**—J. G. Vallentine, Florence, Mass., assignor to himself and E. Vallentine, same place. The combination of the frame A, having the tubular handle C, spring F, scale G, lever E, and receptacle B.

190,279. **Electro-Voltaic Belts.**—James Bryan, New York, N. Y.

190,292. **Locking Devices for Bottles.**—Edward M. Deey, New York, N. Y.

190,295. **Faucets.**—Paul E. Dummer and Peter E. Malstrom, New York, N. Y.

190,301. **Paint Compositions.**—J. Fitzer, Rolla, Mo.

190,356. **Faucets.**—F. Messmer, St. Louis, Mo.

190,358. **Bottles and Stoppers.**—Jas. H. Parker, Newark, N. J.

190,392. **Crutches.**—Lawrence F. Weldon, New York, N. Y.

190,395. **Soda-Water Apparatus.**—Fred. W. Wiesenbrock, Brooklyn, N. Y.

190,395. **Automatic Carbonic-Acid Gas-Generators.**

190,403. **Eye-Glasses.**—S. Oppenheimer, Washington, D. C.—Eye-glasses provided with nose-clamps which are each connected with the glass-frame by means of a spiral spring.

PRESCRIPTIONS AND FORMULÆ.

Standard Formulæ for Certain New Preparations.

(Continued from page 156.)

1. *Neutral Sulphate of Eserine.* A given quantity of eserine (or physostigmin) is directly and *exactly* saturated with sulphuric acid diluted with nine parts of water. Or an ethereal solution of eserine is shaken with a measured quantity of dilute sulphuric acid of known strength, sufficient for *exact* neutralization. Either solution is immediately evaporated to dryness at a gentle heat. It is usually obtained amorphous, although it may, with great difficulty, be obtained crystalline. It is very deliquescent and must be preserved in a well-closed vial. The dose of the salt is 0.001 gm. (about $\frac{1}{54}$ grain) internally. For producing contraction of the pupil (myosis*) 0.02–0.05 gm. ($\frac{1}{3}$–$\frac{3}{4}$ grains) are dissolved in 10 gm. (162 min.) of water.

2. *Bromide of Iron (Ferrous Bromide).*

Iron-filings	40 gm.
Distilled water	216 gm.
Bromine	80 gm.

To the water, contained in a flask, is added first the bromine, and gradually the iron. Towards the end a gentle heat is applied, until the liquid assumes a fine green color. The whole solution, including the uncombined iron, is immediately transferred to a glass-stoppered bottle. As it does not keep long, it is best to at once make it into syrup or into pills. It contains $\frac{1}{3}$ of its weight of bromide of iron. One gramme of pure ferrous bromide is precipitated entirely by 1.56 gm. of silver nitrate.

3. *Syrup of Bromide of Iron.*

Normal Solution of Bromide of Iron (see No. 2.)	15 gm.
Syrup	985 gm.

Mix. 20 gm. of this syrup, or one tablespoonful, contain 0.10 gm. (1.6 grains) of bromide of iron.

4. *Dialysed Iron.*†

Solution of ferric chloride (sesquichloride), spec. gr. 1.261	100 gm.
Water of ammonia, spec. gr. 0.923	35 gm.

Add the latter very gradually to the former. The precipitate formed is redissolved at first very rapidly, then more slowly, but finally it is again entirely dissolved, and the solution is now transferred to a dialyser, the water surrounding which must be frequently renewed. After a while, the highly colored ferruginous solution ceases to precipitate silver nitrate, or to have an acid reaction. It has also lost the characteristic taste of iron. 10 c.c. of the product are evaporated to dryness to ascertain the percentage of ferric

* Incidentally we may remark, that the spelling of this word should, perhaps, be rather *meiosis* than *myosis*. In the latter case it would be derived from *μύω*, "to close the eye," and is quite appropriate; but we are not aware that a word *μύωσις* is used in this sense. The expression *ἡ τῆς κόρης μείωσις*, "the diminution of the pupil," occurs, and *μείωσις*, "*diminution*," is derived from *μείων*, "smaller," the comparative of *μικρός*, "small." It has been written meiosis, meosis, and miosis.

† Two other formulæ for preparing "Ferrum Dialysatum" will be found on page 57 of our February number.

oxide, and the remaining solution is diluted with water until the final product contains 10% of ferric oxide.

5. *Solution of Ferrous Chlorhydro-phosphate.*

Ferrous chloride (protochloride)	5 gm.
Phosphoric acid (tribasic)	5 gm.
Distilled water, q. s. to make	1 litre.

20 gm. of this solution contain 0.10 gm. of the iron salt.

6. *Syrup of Ferrous Chlorhydro-phosphate.*

Ferrous chloride (protochloride)	5 gm.
Phosphoric acid (tribasic)	5 gm.
Distilled water	350 gm.
Sugar	640 gm.

Dissolve the ferrous chloride in the water, add the phosphoric acid, and dissolve the sugar in the solution with a gentle heat. 20 gm. of this syrup contains 0.10 gm. of the iron salt.

7. *Solution of Ferric Chlorhydro-phosphate* and

8. *Syrup of Ferric Chlorhydro-phosphate* are prepared by substituting for the green ferrous chloride (protochloride) the brown ferric chloride (sesquichloride).

9. *Glycerole of Subnitrate of Bismuth.**

Glycerole of starch	90 gm.
Bismuth subnitrate	10 gm.

Mix carefully without heat.

10. *Iodoform.*

Potassium carbonate (pure)	2 parts.
Iodine; rubbed to powder	2 parts and q. s.
Alcohol, 84%	5 parts.
Distilled water	15 parts.

The four substances are introduced into a flask and heated until the liquid is colorless. One-half part of powdered iodine is now added, the liquid heated again, and further small quantities of iodine are introduced, until the liquid retains a brownish tint. This is decolorized by the addition of one or two drops of caustic potassa, and by applying cold, crystals of iodoform are separated. They are collected on a filter, slightly washed with distilled water, dried on blotting paper and placed into well-closed vials.

On evaporating the mother-water, a large quantity of potassium iodide is produced. Iodoform should not yield any fixed salts to water, should be entirely soluble in boiling alcohol, and leave no residue on ignition.

11. *Syrupus Iodo-tannicus* (Syrup of Iodo-Tannin).

Iodine	1 gm.
Alcohol, 90%	11 gm.
Syrup of krameria	988 gm.

Dissolve the iodine in the alcohol, and mix the solution with the syrup. It requires about twenty-four hours at ordinary temperatures, until the iodine has entered into combination; but on warming to 50° or 60° C. this may be accomplished at once. This syrup contains 1 part of iodine in 1,000 parts.

12. *Syrup of Iodide of Starch.*

Iodide of starch, soluble	10 gm.
Distilled water	350 gm.
White sugar, granulated	640 gm.

Dissolve the iodide of starch in the distilled water and filter. Dissolve in this the sugar by means of a very gentle heat. 20 gm. or a tablespoonful of this syrup contains about 0.02 gm. (⅓ grain) of iodine.

Soluble Iodide of Starch is prepared by dissolving one part of iodine in 90% alcohol, adding to it nine parts of nitrated starch,† and evaporating the mixture on the water-bath at a gentle heat. The residue is triturated with water to a smooth paste, which is heated in a flask on the water-bath, until it becomes entirely soluble in water, which is ascertained by removing a sample from time to time, and trying its solubility.

13. *Iodised Syrup of Horseradish.*

Iodine	1 gm.
Alcohol, 90%	11 gm.
Syrup of horseradish, compound*	988 gm.

Dissolve the iodine in the alcohol and add the solution to the syrup. After twenty-four hours combination has taken place, and the original color of the syrup has been restored.

Aromatic Elixir of Licorice (J. P. Remington).

Cinnamon (in fine powder)	6	parts.
Star anise " "	4	"
Coriander " "	7	"
Caraway " "	7	"
Tonqua " "	4	"
Canella " "	2	"
Nutmeg " "	2	"
Cloves " "	2	"
Ammoniacal glycyrrhizin	40	"
Oil of orange (fresh)	2	"
Alcohol	532	"
Syrup	1000	"
Water	475	"

Mix the oil of orange with the alcohol and water, and percolate the aromatics, recovering 1,000 parts of percolate by pouring sufficient water on top to accomplish the purpose. Dissolve the ammoniacal glycyrrhizin in a small quantity of boiling water, and add to the rest, after mixing with the syrup.—*Am. J. of Pharm.*

Basham's Mixture (*Am. J. of Pharm.*).

Tinct. ferri chloridi	partes	3
Acid. acetici dil	"	4
Liq. ammonii acet	"	32
Curaçao	"	8
Syrup. cort. aurant	"	12
Aquæ q. s. ad	"	64

Vaginal Gelatine Suppositories of potassium iodide, zinc sulphate, alum, copper sulphate, morphia salts, salicylic acid, etc., have been recommended as being much superior to those made with cacao butter, because the remedial agents are contained in them in the state of solution, instead of mere mechanical division. Tannic acid and ferric preparations, as Liquor Ferri chloridi, Monsel's solution, etc., should not be combined with gelatine, as the result would be the formation of difficultly soluble compounds.

Solution of Bromhydrate of Conia, for hypodermic use.

Bromhydrate of conia, cryst.	0.50 gm.
Alcohol, 90%	1.50 "
Cherry-laurel water	23.00 "

1 gramme contains 2 centigrammes (0.02 gm.) of the salt; or 1 drop contains about 1 milligramme (0.001 gm.)—*Bull. de Thér.*

Treatment of Cholera Infantum. (King.)

Leptandrin	6 grs.
Quinia sulphate	3 "
Camphor	1½ "
Ipecac	¾ "

Mix and divide into 12 powders, of which one may be given every two or three hours, to be continued, if necessary, for several days.

Tichborne's Solution of Atropia.

Dissolve 2.7 grains of atropia and 1.3 grains of salicylic

* This is different from Balmanno Squire's *Glycerole of Nitrate of Bismuth*, which is a *solution* of the *crystalline* nitrate in glycerine. The above, however, is merely a mixture.

† Nitrated starch is starch in which a portion of the hydrogen has been replaced by NO_2 (nitryl). It is prepared by mixing starch with nitric acid of spec. grav., 1.500, forming a colorless jelly, which is placed into water, and yields a white curdy insoluble substance, called *xyloidin*. De Vrij's *pyroxam*, obtained by placing starch, dried at 125° C. in vacuo, into a mixture of nitric and sulphuric acids, and treating the product with water, is either identical or homologous to the former.

* See Formula under Notes and Queries, p. 184.

acid in 1 fluid ounce of water. The solution, containing salicylate of atropia, may be preserved without difficulty, and is not irritating.

Correction. One of our subscribers has been kind enough to call our attention to a couple of errors in a formula on page 373 of the volume of NEW REMEDIES for 1875. We therefore reprint the formula as it should have read:

TONIC IN ANÆMIA.

℞	Tinct. ferri chloridi	f. ʒ iij.
	Potassii chloratis	ʒ i.
	Solut. strychniæ sulph. (gr. i. ad f. ʒ i.)	f. ʒ ij.
	Syrupi simplicis	f. ʒ iv.
	Aquæ puræ q. s. ad	f. ʒ iv.

M. Sig. Two teaspoonfuls, three times daily, as a tonic in anæmia.—DR. D. S. BRAINARD.

ITEMS.

The American Pharmaceutical Association.—The twenty-fifth annual meeting of the American Pharmaceutical Association will assemble in the City of Toronto, Canada, on Tuesday, the 4th of September, 1877, at 3 o'clock, P.M.

Members of the Association who have accepted any of the Queries, or who will have any volunteer essay to present to the Association, will please forward to the Chairman of the Committee on Papers and Queries, William McIntyre (2229 Frankford avenue, Philadelphia), a synopsis of the same, previous to the meeting, as required by the by-laws of the Association.

Candidates for membership will please forward their applications, properly filled up, to the Chairman of the Executive Committee, George W. Kennedy, Pottsville, Penna.

It is also requested that the delegates from the various bodies represented in the Association will have their credentials ready to be handed in at the first meeting.

CHARLES BULLOCK,
President.

Philadelphia, June 1, 1877.

The Medical Society of the State of New York.—Dr. Squibb, the President-elect of the Medical Society of the State of New York, has adopted the plan now becoming common among similar societies, of announcing beforehand the business to be transacted at the coming meeting on the 19th inst. From his circular note we learn that the following papers on therapeutical topics are to be presented: "The use of Ergot," by Alex. H. Crosby, M.D., of Lowville, Louis Co.; "Nitrite of Amyl in Pertussis," by George Bayles, M.D., of New York; "Jaborandi," by Alexander Hutchins, M.D., of Brooklyn; "Tar Fumigations in Gangrenous Sores," by Lewis Post, M.D., of Lodi; "The Cold Bath in Scarlatina," by C. H. Giberson, M.D., of Brooklyn; "Vaginal Injections," by Frank P. Foster, M.D., of New York; "Hydrochlorate of Ammoniæ—Ammoniæ-murias," by C. G. Pomeroy, M.D., of Newark, N. Y.; "Action of Mercury," by H. N. Eastman, M.D., of Owego; and "Opium Inebriety and the Hypodermic Syringe," by S. F. McFarland, of Oxford.

Massachusetts College of Pharmacy.—The following named officers were elected at the recent annual meeting: *President*, S. M. Colcord; *Vice-Presidents*, T. L. Jenks, Wm. S. Folger; *Recording Secretary*, D. G. Wilkins; *Corresponding Secretary*, G. F. H. Markoe; *Treasurer*, E. L. Patch; *Auditor*, Chas. A. Taft; *Trustees*, J. S. Melvin, J. T. Leary, Henry Canning, Chas. I. Eaton, I. B. Patten, G. H. Cowdin, T. F. Stacey, S. C. Tozzen. After the destruction of the College building, January, 1877, the School of Pharmacy was enabled to continue the courses of instruction through the friendly aid of the officers of the Massachusetts Institute of Technology, who placed their chemical lecture room and apparatus at the service of the school for the balance of the session of 1876-77. The eleventh annual commencement took place in the parlor of the Revere House on the evening of May 10, 1877. A levee was held during the early part of the evening, and after an hour passed in social intercourse, the President, S. M. Colcord, conferred the degree of graduate in pharmacy upon the following named gentlemen: Henry Knox Appleton, jr., Edwin Porter Burley, George William Flynn, Geo. Melvin Hoyt, Frank Bassett Meade, Jonathan Washburn Pratt, Francis Cook Simson, George Howland Stoddard, and John Townsend. A certificate of proficiency was presented to Miss Louise Baker. The valedictory was delivered by Prof. G. F. H. Markoe.

The graduating exercises over, the company, to the number of one hundred, adjourned to the "dining hall," and partook of an elegantly served dinner, given in honor of the class of "'77." The "good things" for the inner man having been duly discussed, President Colcord then called the attention of the ladies and gentlemen present to the many difficulties that had beset the progress of the college; her steady advance in influence and usefulness, not only in promoting pharmaceutical education, but also in the equally important matter of encouraging social intercourse and fostering good fellowship in all branches of the drug trade. He said that the festival had brought together many representative men, and he then called upon Prof. Markoe to act as toast-master. W. J. Cutler, Esq., spoke for the Boston Druggists' Association, Profs. J. M. Merrick and W. P. Bolles for the School of Pharmacy, Messrs. S. Carter and T. K. Gilman for the Wholesale Drug Trade, Mr. E. S. Kelly for the Alumni Association, Mr. Geo. M. Hoyt for the Class of 1877, Miss Baker for the "Lady Pharmacists," Mr. W. S. Folger for the Board of Trustees. A very amusing speech by Dr. T. L. Jenks kept the company in great glee while he spoke. The venerable Daniel Henchman, the oldest apothecary in Boston, was present and made an excellent address, full of interesting facts of the way in which pharmacy was practiced in Boston when he began his career as an apothecary 75 years ago. Mr. Thos. Doliber and Mr. Geo. Sears also spoke in response to calls from the toast-master. Letters were read from W. B. Blanding, President of the Rhode Island Pharmaceutical Association, A. L. Calder, President of Rhode Island State Board of Pharmacy, Prof. P. W. Bedford, of New York, all of whom expressed many regrets at their inability to be present. The famous Temple Quartet added greatly to the enjoyment of the occasion by the excellent music with which they favored the company. It was past midnight when the merry party broke up by singing "Auld Lang Syne," thus closing the most successful "social reunion" ever held under the auspices of the Massachusetts College of Pharmacy.

The presence of the ladies had much to do with the happy way in which the affair passed off.

The Philadelphia County Medical Society and the U. S. Pharmacopœia.—At a large meeting of this Society, held in May, the following resolutions were adopted as offered by Dr. Nebinger:

Resolved, That in the opinion of the Philadelphia County Medical Society, the propositions of Dr. Squibb to modify the *period* of revision of the United States Pharmacopœia and other proposed reforms, are deserving of careful consideration by the Medical and Pharmaceutical professions.

Resolved, That in the judgment of this Society, such reforms and modifications of ancient plans can be more safely entrusted to the National Convention of the Pharmacopœia and its committee of revision, than to any new organization.

Resolved, That the action of this Society be officially transmitted to Dr. John C. Riley, President of the Pharmacopœial Convention at Washington, to Dr. Bowditch, President of the American Medical Association at Chicago, and to Dr. Squibb of Brooklyn.

Resolved, That these resolutions be also published in the *Druggists' Circular*, *Chicago Pharmacist*, *Medical News*, *Philadelphia Medical Times*, *Medical and Surgical Reporter*, *The American Journal of Pharmacy*, *New York Medical Record*, and NEW REMEDIES, as soon as possible.

Dr. Albert H. Smith presented the following resolutions, which were unanimously adopted:

Resolved, That this Society does not recognize the legal or moral right of the American Medical Association to assume the work of issuing a Pharmacopœia, as proposed, nor its fitness for the work, if such right existed.

Resolved, That its delegates to the American Medical Association be instructed to use every proper means, by their votes and influence, to prevent the consummation of the plan proposed by Dr. Squibb.

The Medical Society of the County of New York.—At the stated meeting in May of the above Society, the following resolutions were adopted:

Resolved, That the Medical Society of the County of New York approves of the project of putting the management of U. S. Pharmacopœia into the hands of the American Medical Association.

Resolved, That the delegates from this Society to the forthcoming meetings of the Medical Society of the State of New York and of the American Medical Associations, be instructed to vote in favor of any feasible scheme for carrying said project into effect.

"The Nova Scotia Pharmaceutical Society."—The pharmacists of Nova Scotia have organized an association for which they have obtained an Act of Incorporation.

According to this act, until December next, all persons who at the time of the passage of the act were actually in business as chemists and druggists, and all persons who at that time had served at least seven years at the business, and had attained the age of twenty-one years, are entitled to registration, on payment of a fee of four dollars, which must be continued yearly. All other persons, except alumni of other colleges, will be required to pass an examination before a board of five, two of whom are appointees of the Provincial Government, and the balance of the "Pharmaceutical Council."

The candidate for registration has, also, to prove that he has served three years as an assistant; during one of which he must have had practical experience in dispensing.

There is no restriction upon the sale of poisons by registered druggists, but the law prohibits any other person selling, attempting to sell, having exposed for sale, or keeping open shop for retailing, dispensing, or compounding the articles enumerated in a schedule attached to the act.

The officers elect of the Association are, *President*, H. A. Taylor; *Vice-President*, H. L. Atkins; *Treasurer*, A. Forsyth; *Secretary*, W. H. Webb; *Registrar*, J. H. Angwin; *Councillors*, Messrs. Kent, Forsyth, Fraser, Jackson, Walsh, Webb (W. H.), Atkins, Angwin, McKenzie, Simson, Taylor and Webb (J. W.); *Examiners*, Messrs. Atkins, Simson, Wadell, Webb (J. W.), and Dr. Reid.

College of Pharmacy of the City of New York.—The next quarterly meeting of the College will be held on Thursday, June 21st, at 8 P.M., in the lecture-room of the college. Among the subjects which will come up for discussion are the revision of the U. S. Pharmacopœia; and a discussion of the propositions to be laid before the next Convention of Teaching Colleges, respecting uniformity of regulations in regard to teaching, admission, and graduation of students, etc. The members are particularly requested to appear promptly.

A New Aperient has been invented in Holland. It is composed of gin, dried shells of bitter almonds, roots of gentian, rhubarb, cinchona, etc. It is reported to have advantages over other aperients.

Remedy for Sea-Sickness.—The *British Medical Journal*, without being able to name its authority, says that it is alleged that it has been ascertained that very small doses of apomorphia, taken in water, is a cure for sea-sickness.

Conversazione of the London Pharmaceutical Society.—At a recent social gathering of the members and friends of this Society, at the South Kensington Museum, about 2,500 persons were present.

London Pharmaceutists are making an effort to close their establishments at half-past eight o'clock in the evening, and to discourage Sunday trading when it can be avoided. This, of course, is not intended to interfere with the proper service in cases of emergency.

Dr. T. R. Frazer is spoken of as candidate for the Chair of Materia Medica in the University of Edinburgh.

Medicinal Plants of Scotland.—At the late meeting of the North British Branch of the Pharmaceutical Society, Dr. Craig presented a paper in which it was stated that one-third of the sixty-three natural orders officinal in the Br. Phar. were represented in Scotland. Twenty or twenty-five of the 365 officinal plants are indigenous to Scotland.

Mr. Fliebert has been appointed professor of practical pharmacy in the Medical School at Dijon.

Mineral Waters.—A special exhibition of French mineral waters will be held during the Universal Exposition in Paris, in 1878.

Printed Pills.—Frère, of Paris, manufactures pills with the name of the active principle and the dose legibly printed on each pill.

Homœopathy.—There are at present 300 homœopathic physicians practising in France, 70 of whom are in Paris, and 230 in the departments. There are 14 homœopathic pharmacies equally divided between Paris and the departments.

Cinchona in India.—In a recent article in the English public prints the following account was given of the yield of the cinchona plantations in India:

Some fourteen or fifteen years ago the Government of India planted on the Neilgherry Hills a number of trees which have flourished, and are now producing valuable bark used for making quinine. The yield has been steadily increasing year by year. Last year 60,000 lbs. weight was readily sold in the English market. This year 80,000 lbs. has been received. The Indian barks are of two kinds: the *officinalis* or Crown, and *succirubra*, or red. During recent years private individuals have undertaken the cultivation of these trees, but as yet have not been so successful as the Government in the gardens at Ootacomund.

Mummy-Asphalt.—It was scarcely to be expected that the concession to an English firm of exporting mummy bones from Egypt should have brought anything into the drug market; nevertheless, during March of this year, a quantity of *mummy-asphalt* has been offered for sale and purchased by private contract in London, for use, it is believed, as a brown pigment. "*To what base uses may we come at last!*"—*Pharm. J. & T.*

American Dermatological Association.—The first annual meeting of this Association will be held at Niagara Falls on the fourth day of September next. "The titles of all papers to be read at any annual session shall be forwarded to the secretary, not later than one month before the first day of the session."

Asbestos Paper, entirely incombustible, firm and especially valuable for the recording of important documents, is at present manufactured in the city of Tivoli, Italy. It only cost four francs per kilo (2 lbs.)

A Chinese "Materia Medica" affords some information regarding the flowers used for perfuming tea. The principal ones appear to be those of *Gardenia radicans*, *Jasminum sambac*, *Aglaia odorata*, *Ternstrœnia Japonica*, *Camelia Sassanqua*, and *Olea fragrans*; those of the last-named shrub being especially esteemed for the purpose. The leaves of *Salix alba*, and many other species of willow, are employed in making a kind of Tien-cha, and are said to be openly mixed with the tea intended for exportation at the Chinese ports.

To Estimate Chicory in Coffee.—Mr. Albert Smith, of 198 Essex Road, London, sends to the *Chemical News* the following process for the estimation of chicory in coffee: Take 5 grms. of the coffee, pour upon it about 25 c.c. of boiling water, and filter; then pour it into a test-tube,

and add acetate of lead, which will throw down the coloring matter of the coffee, but leave that of the chicory, which can then be estimated by comparing it with a standard of a known quantity of chicory.

Poisonous Fireworks.—A lady is said to have died recently in Bristol, N. H., from the effects of the fumes from "red fire." Properly made red fire should contain no sulphur or antimony.

Iridescent Mother-of-Pearl is prepared as follows: A sufficient quantity of water of ammonia to cover the object is introduced into a glass-stoppered vial, and silver chloride is added until no more is dissolved and an excess of it is present. The mother-of-pearl object is now placed in the liquid, the vessel closed and set aside in a dark place. After a few days it is taken out and exposed to direct sunlight, whereby the play of colors is developed in a couple of days. The intensity of the iridescence may be regulated by a longer or shorter maceration in the silver solution. The quality of the mother-of-pearl is likewise of great influence upon the result. The object should, if possible, be pure mother-of-pearl; if it contain gold the deposit of silver may be removed by careful treatment with nitric acid; silver-mounting will tarnish, but may be reburnished by rubbing; iron remains unaltered, but brass and bronze are rapidly destroyed in the liquid. According to some authorities, a solution of bismuth sulphide in sodium hyposulphite is also used for coloring mother-of-pearl.

To Cut Sheet-Brass Chemically.—Draw a line across the brass-plate with a solution of a mercury salt, moisten the line with nitric acid, and it may easily be broken like glass. The salt is decomposed, the mercury forming an amalgam with the zinc and the nitric acid attacking and dissolving the copper.

The Production of Wax in the United States is estimated at 20,000,000 pounds per year, value $600,000. The total value of honey and wax produced here annually amounts to about $15,000,000.

Carbolin is the name of a new indelible stamping ink prepared by Dr. Jacobsen, of Berlin, which is a permanent oily liquid, giving clear impressions, does not corrode metal, and the base of which is aniline black.

Statistics of Cinchona Production upon Java.—The total quantity of bark harvested during 1876, upon the government plantations of Java, was 46,443 kilos of whole, and 831 kilos of powdered bark. To obtain these quantities, 56,000 trees were stripped. Towards the end of the year the total supply, with the exception of a few bales, had been sent abroad, although it was extremely difficult, during the past year, to obtain the necessary means of transport to the coast, on account of the unexpectedly large coffee crop, which had to be delivered at Tjikao and other sea ports. Besides, the value of oxen has of late risen considerably, and the natives insist upon higher remuneration for the transport of freight. The following quantities were exported to the Netherlands:

	Chests.	Bales.	Pounds.
C. succirubra	..	290	33,769
C. Calisaya Javanica	97	105	26,991
C. " Schuhkraft	42	22	8,663
C. " Ledgeriana	24	5	3,925
C. officinalis	2	30	3,751
C. Haskarliana	15	21	4,740
C. caloptera	..	8	960
C. Pahudiana	..	4	482
Mixed whole bark	..	14	1,697
Powdered bark	7	..	1,585
Total	188	499	91,563

The official report contains an extremely interesting table of the percentages of alkaloids found in the different varieties of bark, of which we give a condensed abstract:

	Quinia.	Cinchonidia.	Quinidia.	Cinchonia.	Equal to Quinia Sulphate.
C. succirubra	0.43—1.03	2.17—4.78	....	1.38—3.07	0 58—1.38
C. Cal. Javanica	0.58—1.27	0.18—0.89	0.11—0.41	0.73—1.76	0.75—1.71
C. Cal. Schuhkraft	0.23—0.52	0.00—0.13	0.11—0.77	0.62—1.07	0.30—0 70
C. Cal. Ledgeriana	3.38—7.22	....	....	0.08—0.48	4.54—9.72
C. officinalis	3.84—4.02	0.61—0.69	....	0.17—0.18	5.16—5.41
C. Haskarliana	0.94—2.01	0.37—0 42	0.11—0.18	0.66—0.81	1.27—2.70
C. Pahudiana	....	0.52	....	....	....
C. caloptera	0.38	0.21	....	2.03	0.51

Wood-Vinegar.—The manufacture of wood-vinegar has of late been enormously extended, chiefly on account of the simultaneous formation of wood-spirit, or methylic alcohol, which is consumed in the manufacture of aniline colors. In spite of the most careful purification, however, it was impossible, up to the present time, to induce the consumption of wood-vinegar for table use, owing to the pyroligneous flavor which persistently adhered to it. This flavor, however, is said to be entirely destroyed by Mollerat's process, according to which a concentrated solution of sodium acetate, previously several times recrystallized, is decomposed with an exactly equivalent quantity of sulphuric acid, carefully avoiding an excess. Acetic acid, free from foreign odor, is liberated and sodium sulphate is formed, which is but little soluble in cold acetic acid. The last remaining portions of this may be removed from the solution by the careful addition of a little calcium acetate, whereby an equivalent quantity of sodium acetate is formed, which remains in solution, but, owing to its small quantity and innocuousness, is unobjectionable.

To Remove Foreign Bodies from the Nose.—Dr. John Winslow, of Ithaca, N. Y., sends us the following directions to be pursued in this emergency: "Close the empty nostril by pressure with your finger, and blow suddenly and forcibly into the child's mouth. The bean or button commonly flies out at the first effort; if not, a repetition is pretty sure to expel it."

Food for Infants.—An analysis of a food for infants, prepared by Faust and Schustro, in Göttingen, and which resembles that of Nestle, is said to give 11.51 parts of proteids, 76.51 parts of carbo-hydrates, and 1.80 of inorganic salts.

Blue Glass Mania.—The *Boston Medical and Surgical Journal* quotes a passage from Addison's *Spectator* of May 24, 1712, which attributes to the color green an influence upon the animal economy which, it remarks, "now that the public mind is occupied with the silly blue glass mania . . . . may be interesting. The physiology is, to say the least, as good as General Pleasanton's." 'All colors that are more luminous overpower and dissipate the animal spirits which are employed in sight; on the contrary, those that are more obscure do not give the animal spirits a sufficient exercise, whereas the rays that produce in us an idea of green, fall upon the eye in such a due proportion that they give the animal spirits their proper play, and by keeping up the struggle in a great balance excite a very pleasing and agreeable sensation. Let the cause be what it will, the effect is certain, for which reason the poets ascribe to this particular color the epithet of cheerful.' "We are not aware what the origin of 'the blues' and 'blue devils' may be, but they certainly are not suggestive of cheerful associations. We occasionally have to inform correspondents that in our editorial capacity we never prescribe, but we are tempted for once so far to depart from our rule as to suggest to hypochondriacs who are always on the alert for a new remedy, to try the effects of blue pill before investing in blue glass."